

## ABSTRACT

Title of Dissertation:       A BOND RATHER THAN A BARRIER?  
                                      CONSTRUCTING THE ST. LAWRENCE SEAWAY

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A mid-20<sup>th</sup> century water infrastructure megaproject, the St. Lawrence Seaway is a shipping channel that accommodates ships with a 26-foot draft and allows them to traverse a distance of 2,300 miles, from the headwaters of Lake Superior to the Atlantic Ocean. It also facilitates the production of hydroelectric power, harnessing the river's kinetic energy to produce electrical current. Its official opening, in 1959, unified several formerly discrete elements into a coherent bi-national *envirotechnical system*. An environmental and technological system embedded in specific social and ecological contexts, the Seaway caused significant disruption – inundated and relocated communities and altered hydrologic dynamics are the most conspicuous repercussions of its construction and continued operation. Despite this contested history, the Seaway has been “naturalized” and masks many attendant ecological and socio-historical transformations. The Seaway's symbolic power is as potent as its social and ecological

legacies. The project and associated institutions have become symbols of bi-national cooperation, and are held up as exemplars of transboundary resource management. This symbolic legacy obscures the protracted and acrimonious debate that preceded Seaway construction, as well as alternative possibilities and perspectives marginalized in the process.

Accordingly, I contend that the Seaway has both engendered new bonds and simultaneously erected new barriers, transforming the landscape and peoples in myriad and often unanticipated ways. By teasing out the stories concealed by the dominant Seaway narrative, I show that the remaking of the Great Lakes-St. Lawrence, between the 1820s and 1960s, materially and discursively reconfigured adjacent societies and landscapes.

Using envirotechnical analysis deployed in a bi-national narrative, I explore the Seaway as both a symbol and a reality. The boundaries between these forms are permeable not fixed, and both are crucial to its construction and operation. This story is, at its core, an interrogation of boundaries – a narrative focused on two nations and the river that divides and unites them. It is also about the boundaries drawn between culture and nature, the environment and technology, the abstract and physical, expertise and advocacy, as well as myth and materiality.

**A BOND RATHER THAN A BARRIER?**  
*CONSTRUCTING THE ST. LAWRENCE SEAWAY*

by

Jeffrey Brideau

Dissertation submitted to the Faculty of the Graduate School of the  
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Advisory Committee:

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## Table of Contents

Front Matter		i
Introduction		1
Chapter One	<i>An Inland Seacoast</i>	41
Chapter Two	<i>A Deep Water Hymn</i>	84
Chapter Three	<i>Hydro-Powers</i>	132
Chapter Four	<i>Selling the “Seaway”</i>	169
Chapter Five	<i>When the Seaway Goes Through...</i>	247
Chapter Six	<i>The Eighth Wonder of the World</i>	319
Chapter Seven	<i>Après Nous, Le Déluge</i>	408
Conclusions	<i>To Hell With Economics!</i>	480
Bibliography		502

## List of Tables, Maps, and Illustrations

Profile View of the Great Lakes-St. Lawrence System (Illustration)	8
Hydrologic Figures for the Great Lakes-St. Lawrence (Table)	11
Map of the Great Lakes-St. Lawrence System	14
Map of the Welland Canal (c.1901)	63
Map of the St. Lawrence Canals (c.1901)	70
Map of Alcoa’s Construction Plans, International Section (c.1909)	136
Chronology of Seaway Advocacy Organizations (Table)	282-3
Map of Seaway Authority’s Works in Quebec	330
Victoria Bridge, Montreal (Photo c.1963)	335
Model Generating Station (Illustration)	341
Map of the International Rapids Construction Area	359
The “Gentleman” in the International Rapids Section (Photo c.1957)	364
Moses-Saunders Power Dam Under Construction (Photo c.1956)	391
Combined Map of Old and Remade St. Lawrence	414
Dickenson’s Landing Overlay (Map c.1879 and Photo c.1940s)	419
Lionel Chevrier Smoking the Calumet (Photo c.1956)	440
Thomas Hart Benson’s <i>Expedition of Jacques Cartier</i> (Illustration c.1957)	451
House-Movers in Iroquois and Morrisburg, Ontario (Photos c.1958)	465

## Abbreviations

AO	Archives of Ontario
ASEH	American Society for Environmental History
BPA	Bonneville Power Administration
CDWPA	Canadian Deep Waterways and Power Association
CFS	Cubic Feet Per Second
CNR	Canadian National Railway
CPR	Canadian Pacific Railway
ESEH	European Society for Environmental History
FPC	Federal Power Commission
GLSLA	Great Lakes St. Lawrence Association
GLSLTA	Great Lakes-St. Lawrence Tidewater Association
GLWQA	Great Lakes Water Quality Agreement
GNP	Gross National Product
ICC	Interstate Commerce Commission
IDWA	International Deep Waterways Association
IDWC	International Deep Waterways Commission
IJC	International Joint Commission
IWC	International Waterways Commission
JBE	Joint Board of Engineers
LAC	Library and Archives Canada
LGDWA	Lakes-to-Gulf Deep Waterways Association
LoC	Library of Congress
NARA	National Archives and Records Administration
NEMHC	Northeastern Minnesota Historical Center
NEPA	National Environmental Policy Act
NES	National Employment Service
NYPA	New York Power Authority
OPG	Ontario Power Generation
PASNY	Power Authority of the State of New York
QNS&L	Quebec North Shore and Labrador Railway
SCOT	Social Construction of Technology
SHOT	Society for the History of Technology
SLSDC	St. Lawrence Seaway Development Corporation
SLU	St. Lawrence University
STS	Science and Technology Studies
TVA	Tennessee Valley Authority
USRA	United States Railroad Association

I want to make a detour of those lofty arid mountain ranges where one dies of thirst and cold, that “*extra-temporal*” history, that absolute of time and space where there exists neither man, beast, nor vegetation, where one goes crazy with loneliness, with language that is mere words, where everything is unhooked, ungeared, out of joint with the times. I want a world of men and women, of trees that do not talk (because there is too much talk in the world as it is!), *of rivers that carry you to places, not rivers that are legends, but rivers that put you in touch with other men and women, with architecture, religion, plants, animals – rivers have boats on them and in which men drown, drown not in myth and legend and books and dust of the past, but in time, space, and history.*

– Henry Miller, *Tropic of Cancer* (1934)

When I was a child, I read a short book entitled *Paddle-to-the-Sea* by Holling Clancy Holling. A beautifully illustrated story about the journey of a small wooden canoe named “Paddle-to-the-Sea” from Lake Superior to the Atlantic Ocean, the book chronicles Paddle’s adventures along the Great Lakes and St. Lawrence River and his many encounters with people, biota, sawmills, canals and locks, ships and the cargoes they carried, as well as the geologic, hydrologic, and climatic features of the Great Lakes-St. Lawrence basin. This short story and the spaces it depicts captured my adolescent imagination, and, two decades later, my academic curiosity. Paddle’s journey, in a sense, became my own, as my research has taken me up and down the Great Lakes-St. Lawrence from Duluth to Quebec, physically and discursively encountering many of the same artifacts, peoples, and landscapes as Paddle.

Nearing the end of his journey, Paddle spends a winter in the care of an elderly *Canadien* woman, who lives alongside the St. Lawrence River near Montreal. She tells a visiting American boy, who enjoyed her tales about the St. Lawrence, that: “the River has made history... Wish I knew it all;” a sentiment that incisively reflects the underlying premise of my research.<sup>1</sup> As an environmental historian, I claim that the environment is a historical actor and not just a geographic stage on which history plays out. The river *makes* history, and is an active participant in my narrative. Like *Paddle-to-the-Sea*, my story includes non-human protagonists and traverses the same boundary waters, elucidating interactions between Canadians and Americans.

My literary tastes have evolved, evidenced by the quote from *Tropic of Cancer* placed at the dissertation’s outset; however, there is an unexpected consistency of

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<sup>1</sup> Holling Clancy Holling, *Paddle-to-the-Sea* (New York: Houghton Mifflin, 1941), 47. The Henry Miller quote on the first page is from: Henry Miller, *Tropic of Cancer* (New York: Grove Press, 1961), 256 (emphasis added).

sentiment between Miller and *Paddle-to-the-Sea*. Miller pled for a history whose narrative fixed rivers in reality, not just legend or symbol. In many ways, the St. Lawrence is thoroughly mythologized – a constructed space, where the perception of the river’s symbolic power seems more potent than its hydrologic energy. I aim to explore both sides of this story; the social construction of hydrologic system and its symbolic mobilization in the service of specific cultural ends, along with its material processes, the reconfiguration of its hydrology to accommodate human desires, and tactile interactions with its waters. Following Miller, I want to tell a story about the St. Lawrence carrying people and things across space and time; a story about a space that accommodates and resists the forces of production and commerce, a site of recreation and danger – indeed, people sometimes drown in its blue-green waters. In short, I want the reader to see the St. Lawrence as both an abstracted and embodied space – a canvas where people project their dreams, but a material entity that delimits the range of possibility. It is a space where planners’ ambitions and designs confront the realities of hydrology, geology, and climate; where transnational forces confront local communities and people entrenched along the river’s banks. The river is nexus that both delineates and transgresses political and social boundaries. The St. Lawrence is a socially constructed and culturally mediated space, but our machinations to define and utterly control it are never absolute. We cannot thoroughly dominate the river in discourse or reality. As the fictional old *Canadien* woman in *Paddle to the Sea*, remarked – the river *makes* history, and is not simply a stage where the drama of human stories are set. The river is shaped by and shapes our stories and actions.

This dissertation is centered on a specific idea and entity – the St. Lawrence Seaway. A mid-20<sup>th</sup> century water infrastructure megaproject, the Seaway is a shipping channel that accommodates ships with a 26-foot draft and allows them to traverse a distance of 2,300 miles, from the headwaters of Lake Superior to the Atlantic Ocean. It also facilitates the production of hydroelectric power, harnessing the river’s kinetic energy to produce electrical current. Its official opening, in 1959, unified several formerly discrete elements into a coherent, bi-national *envirotechnical system*. The Seaway also engendered significant ecological and social disruption – inundated and relocated communities, and altered hydrologic dynamics are the most conspicuous repercussions of its construction and continued operation. However, as described, the Seaway’s symbolic power is as potent as its social and ecological legacy. It is a trope for bi-national collaboration and exemplar of cooperative resource management. At the commencement of Seaway construction in 1954, Canadian Prime Minister Louis St. Laurent proclaimed: “Rivers, together with mountains and deserts, have long been considered as excellent barriers that make excellent national frontiers, because they divide peoples from one another... but it is certainly no longer the case, as far as the St. Lawrence River is concerned. More and more, this great waterway has become a *bond rather than a barrier*, between Americans and Canadians.”<sup>2</sup> Here, St. Laurent articulated a progressive vision of the Seaway’s potential to remove the physical obstacles to Lake-to-Ocean transportation as well as barriers to improved relations between the nations whose boundaries it demarcates. In the following pages, I unpack this progressive

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<sup>2</sup> Louis St. Laurent, “CBC Radio News Special,” August 10<sup>th</sup>, 1954, *Canadian Broadcast Corporation Website*, updated December 30<sup>th</sup>, 2008, accessed March 29, 2014, <http://www.cbc.ca/player/Digital+Archives/Politics/Prime+Ministers/Louis+St-Laurent/ID/1795923292/> (Emphasis added).

assessment by questioning its underlying assumptions and elucidating the stories, practices, and peoples that materially and discursively constructed the Seaway, as well as those marginalized by it.

My dissertation's title – *A Bond Rather than a Barrier?* – plays with St. Laurent's remarks. Moving beyond the triumphalism of the Prime Minister's assessment, I contend that the Seaway has both engendered new bonds and simultaneously erected new barriers, transforming the landscape and peoples in myriad and often unanticipated ways. By teasing out the stories concealed by the dominant Seaway narrative, I show that the remaking of the Great Lakes-St. Lawrence, between the 1820s and 1960s, materially and discursively reconstructed adjacent societies and landscapes.

### Parameters

Although workers and planners constructed and assembled the Seaway in the 1950s, its story extends backward, and my narrative traverses an extensive temporal scale. My project begins with the aftermath of the War of 1812, and New York's construction of the first Erie Canal – completed in 1825. The Erie, which successfully facilitated the opening western spaces to American economic penetration, provoked a Canadian response to recapture the interior's trade – the first Welland Canal (c.1829). The Welland provided an opening salvo in the development and slow, piecemeal implementation of a broader Canadian scheme to connect the Great Lakes to the Atlantic Ocean, by way of the St. Lawrence. At the end of the 19<sup>th</sup> century, this proto-nationalistic scheme morphed into a transnational dream, by enlisting Midwesterners disaffected with railway rates and their perceived position as hinterlands exploited to enrich eastern metropolises. Throughout the first half of the 20<sup>th</sup> century, I track the stories

of coordinated bi-national advocacy efforts and the construction of institutions engaged in conservation diplomacy, extensively covering the 62-year political debate that preceded official Seaway authorization. Finally, I explore the Seaway project itself, between 1954 and 1959, briefly considering its immediate aftermath and legacies.

Spatially, the Seaway can be defined in two ways. Officially, it extends from the foot of Lake Erie and entry to the Welland Canal to Montreal's final Seaway lock in the South Shore Canal, a distance of 370 miles. However, the Seaway is the centerpiece of a much larger Great Lakes-St. Lawrence System that extends from the head of Lake Superior to the Atlantic Ocean, spanning some 2,340 miles. The bulk of my analytical focus is on the Seaway as officially defined. However, these spatial parameters do not make sense without placing them in their broader hydrologic and conceptual context. The Seaway as a discrete administrative unit cannot be separated from the larger system that encompasses the Lakes, and I extend my narrative and analytical gaze beyond the strict parameters of the "Seaway" when necessary or appropriate.

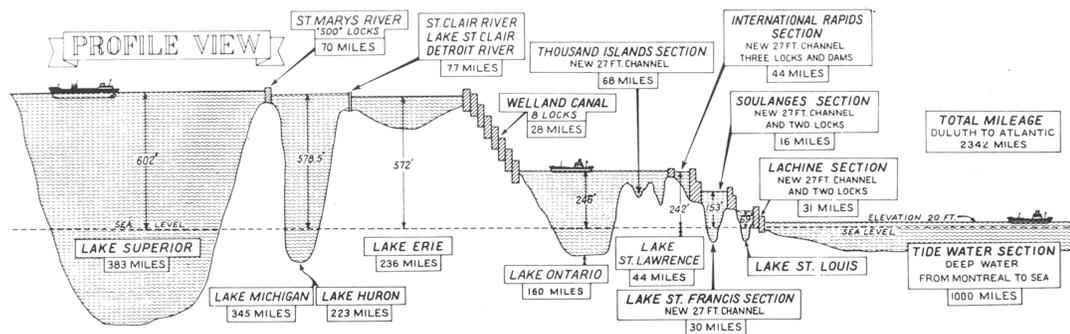
A project that covers a scale and scope of this magnitude must make analytical and narrative choices. This meant trading detail for scale. In the final chapters, I compensate for this trade-off by slowing down the narrative and focusing in on construction in a specific segment of the Seaway – the International Rapids Section of the St. Lawrence, from Iroquois, ON to the Quebec border above Montreal. Here, I tell a story that emphasizes the nexus between local uses and perspectives on the waterway and their transnational counterparts. It is a time characterized by prodigious environmental and social transformation, coordinated and planned at a transnational level, but executed at local domains.

The extensive temporal scope of this project also meant engaging a large array of individual actors as well as shifting institutional and political agents across many states, provinces, colonies, and nations. The only actor that remains constant, though not unchanged, is the river itself. Where possible, I try to allow my human protagonists to speak for themselves, although I am conscious of applying historical significance and framing their words within an analytical framework in which they did not share or participate. The river cannot speak – it is audible, but has no words to offer us. It does, however, keep a record of its history. Rivers embody their own history through shifting course, sediment, and erosion; they are both a historical actor and an artifact of their historical action. It is to this long embodied history, well beyond the scope of this project, that we briefly turn.

### *Mise-en-place*

The geographic setting and orientation of the Great Lakes-St. Lawrence system is integral to the economic, social, and political importance it assumed. About 10,000 years ago at the tail end of the Pleistocene, the last glacial period waned in the face of a warming climate. The massive Laurentide ice sheet, which covered most of what is now Canada and the northeastern United States, collapsed, ending a 75,000-year cycle of glacial advance and retreat. The process of glacial drift – the ice's movement of rock and sediment – carved deep gouges into the face of the earth, creating basins that filled with the melting glacial water. The retreating glaciers' initial hydrologic leavings are unrecognizable as the modern Great Lakes in which they resulted. The proto-Great Lakes had several incarnations, reshaped by rising land relieved of glacial weight – a process known as glacial rebound – and the continued thaw of the retreating ice sheet.

The weight of the glacial ice pushed the St. Lawrence Valley below sea level, allowing saltwater, marine sediment, and biota to rush in as far as present day Kingston, Ontario, forming an inland, saltwater body named the Champlain Sea. This Sea transported deposits of marine clay that, along with glacial till, plagued Seaway contractors during construction. It took another 6,000 years and a rapid, on the geological scale, process of glacial rebound for the Great Lakes-St. Lawrence System to reach a semblance of its current form. This includes the five Great Lakes (Superior, Michigan, Huron, Erie, and Ontario), the St. Lawrence River, and their many tributaries. This process of glacial rebound gave the system its step-stair elevation and oriented its entire flow to the St. Lawrence River, the system's outlet to the sea.



Profile view of the Great Lakes-St. Lawrence system<sup>3</sup>

It is important to bear in mind that these processes described are not only historical but present phenomena that continue to exert force on the hydrogeology of the Great Lakes-St. Lawrence system. For example, the northern Superior basin continues to rebound at a rate of about 21 inches per century, and shorelines, as well as lake levels continue to fluctuate. However, the configuration of the Great Lakes-St. Lawrence has,

<sup>3</sup> The variability in elevation and other figures is a consequence of when measurements are taken. This image is taken from: Jacques Lesstrang, *Seaway: The Untold Story of North America's Fourth Seacoast* (Seattle: Salisbury Press, 1976), 11.

for our purposes, essentially remained constant over the past 2,000 years. Today, human activity and not geologic forces are the primary drivers and stressors of hydrologic change.

The drainage basin for the Great Lakes-St. Lawrence system covers an area of roughly 678,000 square miles, the lakes have a combined surface area of 94,250 square miles, 10,210 miles of shoreline, and an elevation differential of about 600 feet from Superior's headwaters to the Atlantic. The elevation changes in sudden drops, most notably at Niagara Falls – between Lakes Erie and Ontario – where the Niagara River falls a total of 326 feet, more than half the system's total elevation. It drops again rapidly in the section of the St. Lawrence between Kingston, ON and Montreal, QC, falling an additional 246 feet. These precipitous drops proved hazardous to navigation but ideal sites to produce hydroelectric power in the late 19<sup>th</sup> and 20<sup>th</sup> centuries.

The volume of water contained in the Great Lakes – 5,439 cubic miles – comprises about 20 percent of the world's surface freshwater, and 84 percent of the surface freshwater available in North America.<sup>4</sup> Total outflows from this massive freshwater reserve are small – only about 1 percent per year – and the residence time – the length of time it takes water to cycle through a body – varies greatly between the lakes. Superior has an average residence time of 191 years, Michigan 99 years, Huron 22 years, Erie 2.6 years, and Ontario 6 years.<sup>5</sup> This means it takes roughly 320 cumulative

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<sup>4</sup> Measured at low water datum. United States, National Oceanic and Atmospheric Administration, "Physical Characteristics of the Great Lakes," *NOAA, Great Lakes CoastWatch Website*, accessed March 29, 2014, <http://coastwatch.glerl.noaa.gov/statistic/physical.html>.

<sup>5</sup> The Lakes' depths also vary significantly, the largest and deepest lake is Superior with a maximum depth of 1,335 feet and an average depth of 483 feet; the shallowest is Erie with a maximum depth of 210 feet and an average of 62 feet. These variations in depth, surface area, and water temperature greatly influence the flora and fauna in associated with each lake, creating unique but interconnected ecosystems throughout the basin. For this hydrologic data, see: United States, Army Corps of Engineers, "John Glenn Great Lakes Basin Program: Biohydrological Information Base, Vol.1 – Appendix A: Physical Overview of the Great

years to replace the water in all the Great Lakes. This long cycle of water retention also means that changes to the Lakes' hydrochemistry through the deposition of pollution could take centuries to mitigate.

The Lakes' outlet, the St. Lawrence River, is unique among the world's great rivers as its flow is remarkably uniform and consistent. Its maximum flow is about 314,000 cubic feet per second (cfs) and its minimum flow 144,000 cfs. At a glance this variability – about 2:1 – seems substantial, but in the context of other major river's flows it offers a striking contrast – for example, the Columbia's ratio of variability is 35:1 and the Mississippi's is 25:1. This regularity of flow is the consequence of the tremendous storage capacity of the Great Lakes and other bodies of water in the basin, combined with a relatively uniform annual precipitation within the drainage area (varying between 25 and 43 inches annually).<sup>6</sup>

This precipitation often falls in the form of snow, highlighting a major characteristic of the system, its seasonal variation. The system's entire basin experiences temperatures below freezing during the winter months, and much of this winter precipitation is retained in the form of ice – a defining feature of the system and bane of Seaway advocates. Ice conditions vary significantly across the Great Lakes and St. Lawrence, but ordinarily, for two or three winter months the greater part of the non-tidal St. Lawrence is frozen over. This substantially effects the river's navigable season, which by the mid-20<sup>th</sup> century extended, on average, between April 17<sup>th</sup> and December

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Lakes St. Lawrence River System,” September, 2007, *United States Army Corps of Engineers, Detroit District Website*, accessed March 18, 2014, <http://www.lre.usace.army.mil/Portals/69/docs/PPPM/PlanningandStudies/johnglennbiohydrological/02-BiohydroAppA.pdf>.

<sup>6</sup> Theo L. Hills, *The St. Lawrence Seaway* (New York: Praeger, 1959), 26.

4<sup>th</sup>.<sup>7</sup> Although the consistency of the St. Lawrence’s flow precludes many of the high or low-flow problems experienced along other major rivers, flooding behind ice-jams, and blocked river channels are perennial concerns of river adjacent communities and Seaway enthusiasts. Ice plays a crucial role in the behavior and perception of the St. Lawrence, and consequently, ice is a seasonally recurring participant in this narrative as well.

Great Lake							Totals
Feature	Units	Superior	Michigan	Huron	Erie	Ontario	
Surface Area	miles <sup>2</sup>	31,700	22,300	23,000	9,910	7,340	94,250
Volume	miles <sup>3</sup>	2,900	1,180	850	116	393	5,439
Depth (Max.)	feet	1,332	925	750	210	802	--
Depth (Avg.)	feet	483	279	195	62	283	--
Drainage Area	miles <sup>2</sup>	49,300	45,600	51,700	30,140	24,720	201,460
Shoreline	miles	2,726	1,638	3,827	871	712	10,210
Elevation	feet (above sea level)	600	577		569	243	--
Residence Time	years	191	99	22	2.6	6	--
Outlet	--	St. Marys River	Lake St. Clair		Niagara River	St. Lawrence	--
Discharge in Outlet (Avg.)	cubic feet/second (cfs)	71,000	174,000		194,000	229,000	--

Figures taken from the Environmental Protection Agency<sup>8</sup>

For the sake of description and analysis, it is useful to segment the system into five discrete sections. 1) Upstream from the Atlantic, we begin with the Gulf of St.

<sup>7</sup> Ibid., 26-27.

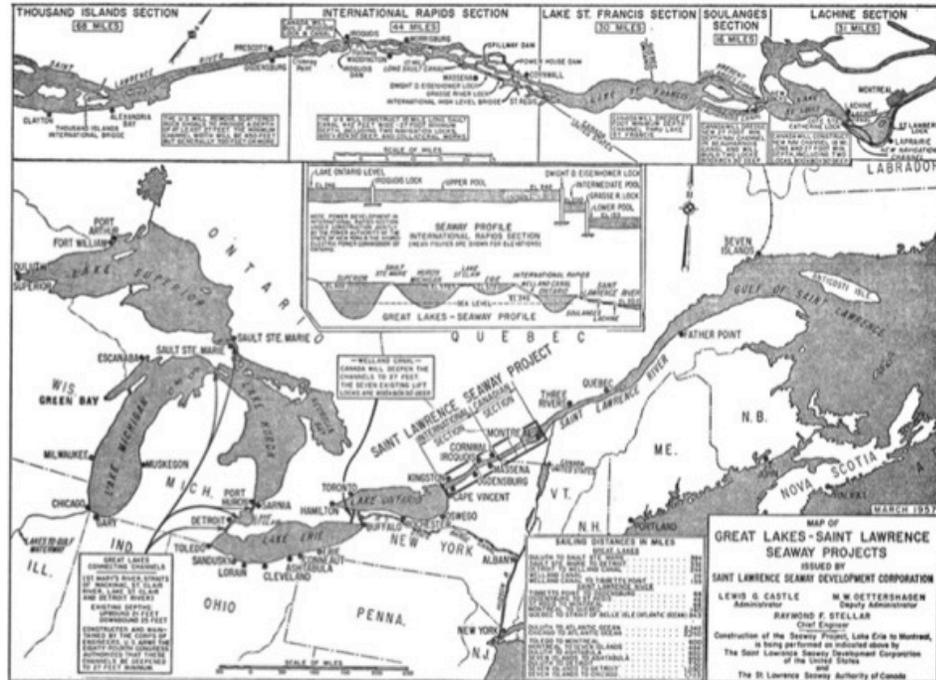
<sup>8</sup> The elevation is measured at “Low Water Datum”; the drainage area for Huron includes the St. Marys River, Erie includes the St. Clair-Detroit system, and Ontario includes the Niagara River; the shoreline figures include islands; and the sum total of shoreline length includes connecting channels as well as lakes. See: United States, Environmental Protection Agency, “The Great Lakes: An Environmental Atlas and Resource Book – Fact Sheet Number 1 ‘Physical Features and Population,’” *Environmental Protection Agency Website*, accessed March 18, 2014, <http://epa.gov/greatlakes/atlas/gl-fact1.html>. Discharge figures at the outlets are taken from: Hills, *The St. Lawrence Seaway*, 26.

Lawrence that extends from the Atlantic to the east end of Anticosti Island, covering an area of roughly 80,000 square miles and is bounded by the Maritime provinces of Canada and eastern Quebec. 2) Heading upriver from the Gulf is an estuarine section that commences at Anticosti Island, where the river is about 70 miles wide, and extends 245 miles upstream to Orleans Island – near Quebec City – where the river is 8 miles wide. Apart from a deep-water port constructed at Sept-Îles, these two estuarine sections do not factor into my narrative. Here, the river is wide, deep, and tidal; and required little intervention on the Seaway project’s behalf. The Sept-Îles port, as an outlet for iron-ore, played an ancillary role in Seaway authorization, but this portion of the St. Lawrence already accommodated ocean-going traffic. 3) The “lower St. Lawrence” extends from Quebec City to Montreal, a distance of almost 170 miles. Just above Quebec, the tidal effect disappears and the river begins to narrow; in fact, the name Quebec is derived from an Algonquin expression that means, “where the river narrows.” By 1907, the Montreal Harbour Commission deepened this channel to thirty-feet, allowing salt-bottomed vessels to reach Montreal’s harbor.

4) The “upper St. Lawrence,” between Montreal and Lake Ontario, is the principal setting of the Seaway story. A distance of 183 miles, the river falls a total of 246 feet in this section and is interspersed by a series of intense rapids. The Lachine Rapids drop the river 50 vertical feet, below Lake St. Louis; and the confluence of the Ottawa and St. Lawrence substantially augments the river’s velocity and discharge. The Seaway circumvents the Lachine Rapids in two locks located in the South Shore Canal. Above Lachine there are a second series of rapids collectively termed the Soulanges. Located between Lake St. Francis and Lake St. Louis, these rapids drop the river 82 feet,

and two locks, known as the Beauharnois, now bypass this 13-mile section. Above Lake St. Francis the International Rapids Section begins, a drop of 92 vertical feet over 44 linear miles. This is the former site of the famous Long Sault Rapids, as well as the Farran's Point Rapids, Rapide Plat Rapids, and the Galop Rapids. The Seaway Power and Navigation project drowned these rapids and constructed the Wiley-Dondero Canal along the River's south channel, which includes the Snell and Eisenhower locks. The remaining upstream stretch of the St. Lawrence, from Iroquois, ON to the foot of Lake Ontario is known as the Thousand Islands Section. This segment of the river crosses a southerly extension of the Canadian Shield, known as the Frontenac Axis. The channel is wide and deep, free of rapids, and densely populated with islands where the shield breaks the water's surface.

5) The final section includes the Great Lakes and their connecting channels. The Niagara River connects Lakes Erie and Ontario, and features most conspicuous element of the entire system, Niagara Falls. The Welland Canal bypasses the Falls, traversing 28 miles across the Niagara escarpment, and lifts or lowers boats through a series of eight locks. Above Lake Erie, a 77-mile course, which includes the Detroit River as well as the lake and river named St. Clair, connects Erie to Lake Huron. In a sense, Lakes Huron and Michigan are one massive hydrologic entity connected by the Straits of Mackinaw, and share a single outlet. These lakes are fed by the 70-mile St. Marys River, which includes the "Soo Locks" and connects Lake Superior to Huron and Michigan. In sum, the entire system stretches over 2,300 miles from the headwaters of Lake Superior to the Atlantic Ocean.



The Great Lakes-St. Lawrence System, SLSDC ©<sup>9</sup>

These are the principal features of the Great Lakes-St. Lawrence. Its scale is unparalleled among the world's freshwater systems. Apart from a few spaces with precipitous falls and raging currents, it is a consistent, even placid system – massive and momentous, but relatively uniform and quietly powerful. Its waters, in many ways, structure adjacent societies. Its basin is home to 36 million people in two countries, eight states, and two provinces. The system is intersected by and informs political boundaries, as well as linguistic and cultural divides. Today, it is home to roughly half of Canada's and one-fifth of the United States' manufacturing capacity; supports 25 percent of Canada's agricultural production and 7 percent of its U.S. correlate; the system provides tens of billions of gallons of water per day to regional municipalities to supply public water needs, acts as a sink for their wastes; and it accommodates the world's longest

<sup>9</sup> A reproduction of this map can be found between pages 176 and 177, in: William Willoughby, *The St. Lawrence Waterway: A Study in Politics and Diplomacy* (Madison, WI: University of Wisconsin Press, 1961).

deep-draft inland waterway – the St. Lawrence Seaway.<sup>10</sup> The Seaway represents only a brief moment in the system’s long and variegated story; I share the sentiment of the old *Canadien* woman in *Paddle to the Sea*, when she remarked: “the River has made history... Wish I knew it all.” The pages that follow offer a small aperture into that history, elucidating the story of people’s desires and actions aimed at transforming this system toward a navigable and hydroelectric end.

### Historiographical Setting

In spite of its scale and transformative properties, most historical analyses of this Seaway tend to subscribe to an uncritical interpretation of the project’s effects on the landscape and peoples. My project attempts to build on and revise this literature by incorporating contemporary ideas, approaches, and tools from the histories of technology and the environment. My story intersects a wide range of historical literatures and approaches – histories focused on remaking rivers and canalization; changing approaches to natural resource management and diplomacy; the influence of conservationism across time and space; the construction of networks to facilitate transportation as well as those to produce and transmit hydroelectricity; discourses and efforts to plan at a regional scale; context specific forms of high-modernism and local reactions they elicited; as well as the dynamic relationship between and among Canada, the United States, and their sub-federal jurisdictions. With all these historiographical and intellectual inputs, it is prudent to begin with the principal subject in question – analyses of the St. Lawrence itself.

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<sup>10</sup> United States, Army Corps of Engineers, “John Glenn Great Lakes Basin Program: Biohydrological Information Base, Vol.1 – Appendix A: Physical Overview of the Great Lakes St. Lawrence River System,” September, 2007, pg.A-12, *United States Army Corps of Engineers, Detroit District Website*, accessed March 18, 2014, <http://www.lre.usace.army.mil/Portals/69/docs/PPPM/PlanningandStudies/johnglennbiohydrological/02-BiohydroAppA.pdf>.

Beginning in the 1930s, historians have focused on the centrality of the Great Lakes and St. Lawrence River to Canadian social and economic life, national identity, and cultural imagination. Much of this dialogue surrounded the work of Donald G. Creighton, a historian at the University of Toronto. Creighton set out the “Laurentian thesis” in *The Commercial Empire of the St. Lawrence* (1937).<sup>11</sup> In a sense, the Laurentian thesis acted as a Canadian counterpart to Frederick Jackson Turner’s “Frontier thesis” – an effort to explain westward expansion accompanied by the construction of economic, political, and cultural networks based on the movement of people and resources. For Turner, the dynamic frontier provided a regenerative experience, constantly reaffirming and carrying American democracy and cultural values forward across the continent. Creighton’s Laurentian thesis is more melancholy; a story of possibilities lost, and an ever-receding dream.

For Creighton, the St. Lawrence provided a conduit to link the vast resources of the Canadian hinterland with the metropolitan markets of Europe. The River structured an emerging Canadian society on an east-west axis, thereby forging an integrated economic, political, and social network that enabled the emergence of a distinct polity – Canada. However, Creighton lamented the failure to “improve” the St. Lawrence by removing physical obstacles to trade, claiming that this failure led to a weak and economically dependent Canadian state.<sup>12</sup> The “Empire of the St. Lawrence” remained an elusive dream for a community of Canadian Anglo-elites; their efforts persistently frustrated by a lack of political will and an uncooperative French Canadian community.

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<sup>11</sup> Donald G. Creighton, *The Empire of the St. Lawrence: A Study in Commerce and Politics* (Toronto: Macmillan Company Press, 1956). After the first edition, the publisher removed the word “Commercial” from the title.

<sup>12</sup> See the last chapter for these conclusions: Creighton, *The Empire of the St. Lawrence*, 349-386.

Modern commentators have roundly critiqued Creighton's thesis as an exercise in Canadian mythologizing, but that does not diminish its widespread intellectual currency between the 1930s and 1960s.<sup>13</sup> His narrative's sense of drama and forfeited destiny bolstered a growing sense of Canadian nationalism and self-assuredness evident during the middle decades of the 20<sup>th</sup> century. The prospect of the St. Lawrence Seaway, once again, brought the receding dream of Creighton's Empire of the St. Lawrence into sharper relief.

Creighton's work is a kind of proto-environmental history; an interpretation concerned with how material conditions structure the possibilities for human organization. In his work, the environment set limits and boundaries that informed human behavior and spatial arrangements, but the environment remains basically static – a stage on which human drama is set, but never an active participant in the story. These present shortcomings aside, the Laurentian thesis' widespread circulation makes it a useful place to start, and one that we will return to in the chapters that follow.

Creighton provided a meta-narrative that placed the Great Lakes-St. Lawrence system at the center of Canadian history. Curiously, the St. Lawrence Seaway, which discursively reconceptualized and physically remade those spaces, has not engendered a large or diverse literature. A few histories and commentaries accompanied or quickly followed the Seaway's completion in 1959, and a second round of retrospective works emerged around its 50<sup>th</sup> anniversary in 2009. In general, the earlier works offer a triumphalist narrative – recounting how the Seaway overcame protracted and intense regional and political opposition, the entrenched forces of big business, and the diplomatic hurdles associated with a transboundary project. These works tend to take an

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<sup>13</sup> These critiques are further discussed in Chapter Five, below.

uncritical view of the project and its effects. In the end, they argue, the Seaway's obvious benefits – ships from the seven seas docking in Duluth's harbor and abundant hydroelectric power – will outweigh any costs associated with the project. Lionel Chevrier's autobiographical account – *The St. Lawrence Seaway* (1959) – is the most illustrative example of this variety of Seaway narrative. Chevrier, a long time Seaway advocate and the first president of Canada's St. Lawrence Seaway Authority – the agency responsible for the construction and operation of Canada's portion of the Seaway's navigation facilities – furnishes an internal-perspective and some useful detail, but clearly had a vested interest in providing an enthusiastic and complimentary narrative of the project's design and implementation.

William Willoughby's *The St. Lawrence Waterway: A Study in Politics and Diplomacy* (1961) is a monograph length study of the Seaway idea's political development and the diplomatic avenues traversed to obtain an agreement across the national boundary. In short, Willoughby eschews materiality in favor of political and diplomatic discourse. The Seaway remains an abstract notion, not a system of environmental and technological artifacts with social and spatial consequences.

In my opinion, the finest published work on the Seaway, to date, is Carleton Mabee's *The Seaway Story* (1961). Written in the project's immediate aftermath, Mabee's work is rife with editorializing and disproportionately focuses on the American side of the boundary. Its scope and genuine effort to focus on people, not only abstract designs make it an excellent entry into the Seaway narrative, but it lacks analytical force. In fairness to Mabee, the analytical tools available to present historians to construct

histories of the environment and technology remained undeveloped, and he bequeathed a rich vein of sources, ideas, and other archival materials to future researchers.

The final salient piece of this early crop of Seaway literature is Theo L. Hills' *The St. Lawrence Seaway* (1959). Hills, an eminent geographer at McGill University, took a diametrical position. He argued that the Seaway's success was not a foregone conclusion, and questioned the range and distribution of Seaway benefits, the project's financial solvency, and the early obsolescence of its facilities. In contrast to Mabee's work, which relies primarily on the claims of Seaway enthusiasts, Hills draws on a long tradition of Seaway skepticism. His insights, provocative in the moment, are retrospectively prescient. Hills' focus on abstract economic speculation precludes substantive discussion of the project's material dimensions, but his analysis remains an excellent counterpoint to triumphalist contemporaries.

Surrounding the Seaway's 50<sup>th</sup> anniversary in 2009, Claire Parham's *The St. Lawrence Seaway and Power Project: An Oral History of the Greatest Construction Show on Earth* (2009) deliberately inserted individual voices into the Seaway story. Her book is mostly comprised of a large collection of personal interviews and first-hand accounts. Parham captured the voices of workers, administrators, wives, spectators, and locals, and by doing so, provided a significant service to future researchers.

Ronald Stagg's *The Golden Dream: A History of the St. Lawrence* (2010) is an excellent, sweeping survey of the Seaway idea and project that attempts to augment the Canadian side of the story, underexplored in earlier, principally American literature. *The Golden Dream* is aimed at popular audiences and only superficially considers the

concerns of environmental and technological history. It is rife with descriptive detail, especially on 19<sup>th</sup> century Canadian canal networks, but short on analytical commentary.

Daniel Macfarlane's unpublished Ph.D. thesis *To the Heart of the Continent: Canada and the Negotiation of the St. Lawrence Seaway Navigation and Power Project, 1921-1954* (University of Ottawa, 2010), is a detailed investigation of the entangled stories of Canadian nationalism and Seaway negotiations.<sup>14</sup> He focuses almost exclusively on the period between 1945 and 1954. Given its dissertation form, it provides the most academic treatment of the subject in the works I have delineated. Macfarlane argues that the requirements of a growing Canadian economy spurred governmental interest in an all-Canadian seaway alternative, which, in turn, struck a nationalistic chord that resonated a growing sentiment of national self-assuredness pervasive in Canada at midcentury. Like Creighton, Macfarlane tries to capture the centrality of the St. Lawrence to the Canadian sense of identity, coining a descriptor for this phenomenon – “hydrological nationalism.”<sup>15</sup>

The most significant recent work to intersect the Seaway story is Joy Parr's *Sensing Changes: Technologies, Environments, and the Everyday, 1953-2003* (2010). In the fourth chapter – “A Walking Village Remade” – Parr focuses on Iroquois, ON and its

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<sup>14</sup> Daniel Macfarlane published a book based on his dissertation after this project had been written; thus, it is not included in the discussion that follows. See: Daniel Macfarlane, *Negotiating a River: Canada the US, and the Creation of the St. Lawrence Seaway* (Vancouver: UBC Press, 2014).

<sup>15</sup> There are a number of other contributions – of variable in length and significance – to Seaway literature that are not overlooked in the following pages. For example, William H. Becker's *From the Atlantic to the Great Lakes: A History of the U.S. Army Corps of Engineers and the St. Lawrence Seaway* (1984) effectively summarizes the Army Corps of Engineers' role in the construction and management of the Seaway. Laurence M. Hauptman's *Iroquois Struggle for Survival: World War II to Red Power* has an excellent chapter (Chapter 8) on the interaction of Mohawk, First Nations communities with the construction and aftermath of the Seaway project. Jeff Alexander's *Pandora's Locks: The Opening of the Great Lakes-St. Lawrence Seaway* (2009) is a journalistic assessment of the Seaway's environmental legacy. D'Arcy Jenish's *The St. Lawrence Seaway: Fifty Years and Counting* (2009) was commissioned by the St. Lawrence Seaway Management Corporation to recount the project's history for a public audience. Finally, Jacques Lesstrang's *Seaway: The Untold Story of North America's Fourth Seacoast* (1976) is a vivid collection of Seaway photographs along with a straightforward description of the project's features.

forced relocation to make way for the Seaway. Iroquois is counted among the “Lost Villages” that the project flooded and reconstructed. Parr’s focus is two-fold. First, she describes how the residents of Iroquois embodied the spaces they lived in prior to the Seaway, what she calls their “sensuous histories.” She assesses spatial practices of daily life and the habits through which locals embodied the village and river. The Seaway project fundamentally undermined these practices and left the residents without the physical and psychological benchmarks through which they made sense of themselves and their surroundings. Second, Parr relates this story of profound loss to a process of modernization under the auspices of a megaproject. My seventh chapter extends her insights over space and time, and connects local processes to transnational ones. Parr’s work is path breaking and offers new insights into complex relationships between the megaproject, local resilience, as well as space, habit, and identity.<sup>16</sup>

Collectively, these works define the field of Seaway literature. My project is, as a matter of course, situated within this field. I build on the existent literature by approaching the Seaway through different analytical lenses, revisiting and identifying unexplored archival material, and placing the Seaway story in conversation with the larger fields of environmental history and the history of technology. This requires engaging a much broader historiographical literature and range of conceptual and methodological approaches to historically assess dynamic environments and technologies. In the interest of conceptual clarity, I have organized my analysis around three main analytical contributions, to which I continually return – *the Seaway as an*

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<sup>16</sup> Parr’s contribution does not end with this chapter and, in conjunction with the University of Western Ontario’s *Megaproject’s New Media Website*, she made a series of audio recordings of interviews with Iroquoians available in an interactive digital format. Like Claire Parham’s work, preserving these voices and first-hand accounts did a service to future researchers.

*envirotechnical system, the Seaway as a transnational space, and the Seaway as a transformative agent.* In the sections that follow, I describe each unique analytical offering, cite the works and ideas that shaped my approach, and situate these contributions in relation to the Seaway.

### *The Seaway as an Envirotechnical System*

This work is a contribution to a growing literature associated with the Envirotech community – an interest group within the Society for the History of Technology (SHOT), as well as the American Society for Environmental History (ASEH) and its European counterpart (ESEH). Envirotech is dedicated to exploring the intersections between the fields of environmental history and the history of technology, and problematizing the boundaries between their subjects. The recent publication of an expressly Envirotech anthology – *The Illusory Boundary: Environment and Technology in History* (2010), edited by Martin Reuss and Stephen H. Cutcliffe – aimed to explore the fundamental interdependence of technologies and environments, as well as the permeability of the boundaries drawn between them. This work directly influenced my project, providing conceptual cover to reframe questions about the boundaries delineated between humans, the built world, and the environments they worked to transform.<sup>17</sup> *The Illusory Boundary* and the community it represents, drew inspiration from previous historical trajectories – notably represented by *The Social Construction of Technological Systems* (1987), edited by Wiebe E. Bijker, Thomas P. Hughes, and Trevor Pinch; and *Uncommon Ground: Rethinking the Human Place in Nature* (1996), edited by William Cronon. Proponents of the Social Construction of Technology (SCOT) reject rigid technological determinism

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<sup>17</sup> It is fortuitous that two contributors to this volume – Thomas Zeller and Betsy Mendelsohn – have directly played a role in shaping and evaluating this dissertation.

and argue that human values and activities shape technology. The contributing authors in *Uncommon Ground* similarly touched off a reconceptualization of the human relationship to nature, and suggested a dialectical construction of nature and culture. The adherents of Envirotech take these analytical trajectories a step further and challenge the historical community to reconceive the relationship between environment and technology as one of interdependence, mutual constitution, and even imaginary boundaries.

In many ways, this dissertation owes its existence to Richard White's *The Organic Machine: The Remaking of the Columbia River* (1995). Brief and brilliant, this book inspired my focus on rivers and environmental history. Like *Uncommon Ground*, White's *Organic Machine* encourages us to rethink our relationship with nature.

Claiming that humans know nature through work, White tells the story of the Columbia River through interconnected and dynamic geographies of energy and culture. For White, the technological artifacts shaped and deployed by humans, which populate the Columbia, are not fundamentally unnatural, but a hybridization of nature and technology – the eponymous “Organic Machine.”

Despite its personal and widespread influence, the “organic machine” is not in the title of this specific analytical contribution. Instead, I use the term “envirotechnical system,” conceived by Sara Pritchard and deployed in *Confluence: The Nature of Technology and the Remaking of the Rhône* (2011). I borrowed this term for its analytical precision and because it demonstrates an evolving description of the relationships between the environment, technology, and society. White's hybrid organic machine explores the natural dimensions of technology and the technological dimensions of nature, but *envirotechnical* analysis challenges the existence of boundaries between

these categories and artifacts.<sup>18</sup> Practitioners of Science and Technology Studies (STS) have long emphasized the hybridity of landscapes – spaces comprised of both nature and culture, often referred to as “nature-culture” – and some STS scholars, like Bruno Latour, have sought to push back the boundaries between these subjects by describing networks that include both human and nonhuman actors.<sup>19</sup> I argue that Pritchard’s envirotechnical concept is more precise because she acknowledges that a non-reflective use of hybridity risks flattening the distinctions between hybrids and masking how they change over time – the central concern of historical analysis.

Ironically, the precision of envirotechnical analysis derives from its inclusivity and flexibility. Envirotechnical systems are usefully defined as: “*historically and culturally specific configurations of intertwined ‘ecological’ and ‘technological’ systems, which may be composed of artifacts, practices, people, institutions, and ecologies.*”<sup>20</sup>

This definition posits a highly inclusive view of what constitutes environments and technologies – “environment,” rather than ecosystem, connotes surroundings that include more than “natural” features; and “technical” combines knowledge and practices, along with technological artifacts. This expands the possible range of what can be included in the system, and allows the system to be historically dynamic – an evolving array of constituents and configurations. In fact, dynamic environments and technologies embedded in an envirotechnical system tend to continually reshape the system itself. This means the analysis of a particular system is contingent on time, culture, ecology, and technology. In a sense, we have to flatten the system to describe it at a particular

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<sup>18</sup> Sara Pritchard, *Confluence: The Nature of Technology and the Remaking of the Rhône* (Cambridge, MA: Harvard University Press, 2011), 21.

<sup>19</sup> For an example of Latour’s argument and the use of “nature-culture”, see: Bruno Latour, *We Have Never Been Modern*, Catherine Porter, trans. (Cambridge, MA: Harvard University Press, 1993), 7.

<sup>20</sup> Sara Pritchard, *Confluence*, 19 (emphasis added). Her discussion of hybridity is found on pages 246-247.

moment, while being cognizant that it is constantly evolving and that multiple envirotechnical systems can coexist and overlap.

Pritchard expands her analytical contribution by proposing a corollary idea – the *envirotechnical regime*. The envirotechnical regime consists of the “institutions, people, ideologies, technologies, and landscapes that together define, justify, build, and maintain a particular envirotechnical system as normative.”<sup>21</sup> The regime directs and sustains systems toward particular ends, and is underscored by discourses and other manifestations of political, economic, and social power.

Accordingly, I view the Seaway as an envirotechnical system that is neither strictly technological nor environmental, but an evolving assortment of artifacts, peoples, practices, institutions, and ecologies. Engaging the Seaway through this analytical lens, I explore the inextricable links between the anthropogenic and natural, interrogate the boundaries between them, and expand the existent literature’s analytical and narrative scope. This conceptual framework allows me to historicize the Seaway as an integration of a series of discrete, overlapping, and often competing antecedent systems. This requires a longer view of the Seaway story, including the idea’s discursive origins, the protracted debate that preceded its construction, the bi-national institutions established to manage boundary resources, advocacy and opposition groups compelling or arresting Seaway development, the project’s technological antecedents, and the construction of a politically sanctioned Seaway system.

### *The Seaway as a Transnational Space*

It is a truism that the environment does not respect political boundaries, and my project is sympathetic with a growing literature that attempts to de-center the nation state

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<sup>21</sup> Ibid., 23.

as the primary unit of historical analysis.<sup>22</sup> However, political borders inform and condition interactions between peoples and the environment. I place the Seaway in its transnational context and explore how a project that transcends national boundaries renegotiates relationships between communities and with the environments that they have collaboratively or competitively worked to transform.

The Seaway's transnational character provides a significant opportunity to contribute to the literature on the history of rivers. Previous studies have demonstrated how rivers and associated management regimes inform and buttress national and regional identities. For example, Daniel Macfarlane's work on the St. Lawrence directly addresses its centrality to the Canadian sense of identity and emergent nationalism. Donald Worster's *Rivers of Empire: Water, Aridity, and the Growth of the American West* (1986) describes the construction of a modern "hydraulic society" in the western United States based on aridity and the large-scale manipulation of water resources.<sup>23</sup> These are undiminished, important contributions to river history; however, I argue that the Great Lakes-St. Lawrence provides an exceptional opportunity to explore the reconfigurations and reifications of identity in a transnational context.

A shared and contested space, the boundary waters have harbored a series of competing and complementary visions and systems aimed toward specific human ends. The earliest large-scale interventions were distinctly nationalistic and competitive in character; but by the end of the 19<sup>th</sup> century, discourses surrounding the further technological development of these waters became increasingly conciliatory between

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<sup>22</sup> For example: Thomas Bender, ed. *Rethinking American History in a Global Age* (Berkeley: University of California Press, 2002).

<sup>23</sup> Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (New York: Pantheon Books, 1986), 7.

waterway advocates on both sides of the border. The establishment of the International Joint Commission (IJC), in 1909, marks a watershed in a corresponding institutional and diplomatic *rapprochement*. A permanent institutional, diplomatic mechanism, the IJC is designed to adjudicate, investigate, and make recommendations on boundary water disputes. Despite their disproportionate power relationship, the IJC furnishes equal representation for Canada and the United States, and is generally regarded as a paragon of cooperative resource management as well as a source of environmental expertise. The Seaway debate was instrumental to the IJC's inception, and the forces of Seaway advocacy substantially benefited from its operation, occasionally blurring the lines between dispassionate expertise and political advocacy. Constructivists and STS scholars, myself included, argue that these lines, like the boundaries between environments and technologies, are cultural constructs to begin with. However, the perceived epistemic authority of these experts and the mechanisms that gave their opinions political and cultural weight yielded material consequences.

Building on the work of Kurkpatrick Dorsey's *The Dawn of Conservation Diplomacy: U.S.-Canadian Wildlife Protection Treaties in the Progressive Era* (1998) – which explored a matrix of factors contributing to the failure or success of three specific treaties aimed at wildlife conservation – I explore how Seaway discourse and associated institutions, like the IJC, contributed to the construction of a novel form of conservation diplomacy. This diplomatic machinery renegotiated the dynamics of Canadian-American relations, and created diplomatic space to confront one another directly, in an era when the British typically mediated their interaction.

I deliberately chose “trans” and not “bi” national because the Seaway traverses more than just the Canadian-American boundary. It intersects a labyrinth of federal and sub-federal jurisdictions that were instrumental in determining its discursive and material construction. These political domains are dynamic and change over the course of the Seaway narrative. For example, the Seaway idea was first conceived in Upper Canada (Ontario), a colonial possession of the British Empire granted a limited form of responsible government. Not until 1867, was Canada, as a recognizable political entity, formed; and even then, the British continued to conduct its foreign affairs. In the chapters that follow, I trace this jurisdictional dynamism.

The use of transnational further acknowledges the presence of competing nationalisms outside a strict Canadian-American dichotomy. First Nations peoples, considered in the final chapter, profess a series of separate national identities, which shaped their interaction with the Seaway project. The boundaries between First Nations reserves and adjacent communities are ambiguous spaces that raise questions about jurisdiction and identity. Moreover, a discourse aimed at constructing a French Canadian nationalism emerged in the early decades of the 20<sup>th</sup> century, and further complicated the Seaway’s transnational character.

Throughout the dissertation, I trace the Seaway’s interaction and transgression of these boundaries; mindful that it occupies a shared and contested space cluttered with competing jurisdictions, cultures, and power dynamics. Boundaries and their transgression or renegotiation are central to this project. My title references the claim that the remaking and management of the St. Lawrence River has been a unifying force – a bond rather than a barrier. I challenge this assertion by highlighting the communities,

ideas, and practices marginalized by Seaway discourse and materialization. In the language of the foregoing analytical lens, the Seaway system is sustained by an envirotechnical regime that has normalized a narrative premised on a set of bi-national interests, advanced by unparalleled transboundary cooperation and a nebulous notion of “progress” through technological intervention. However, the protracted debate preceding Seaway construction, competing local, regional, and national motivations, along with the stories of disenfranchised communities, practices, and discourses undermine this dominant narrative. The constructions of bi-nationalism within the prevailing envirotechnical regime, as well as their discontents are highlighted here.

*The Seaway as a Transformative Agent*

Most contemporary scholars in the histories of technology and the environment accept and adopt a constructivist position and approach. This section offers an important complement to that constructivist view. I consider how relevant societies shaped the Seaway to specific ends, but also ask the inverse question: how has the Seaway shaped relevant social groups? Asserting the materiality of landscapes is an essential feature of environmental history and informs my analysis. Material environmental conditions do not dictate, but constrain and inform the realm of technological possibility. Physical geographies, the arrangement of space, and the material composition of things matter. For example, the unexpected quantities, qualities, and spatial distribution of tough marine clay found along the St. Lawrence’s bed confronted and undermined planners’ abstract constructions of the river. This serves as a reminder that our pretensions of complete dominion over nature can never be achieved in the absolute.

This lens engages with a literature focused on megaprojects and the abstraction of complex realities. It employs James C. Scott's *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (1999) – including its concepts of high-modernism and legibility, contrasted with *métis* (local, practical wisdom) – as a conceptual entry point.<sup>24</sup> Scott's magisterial work, said with a touch of irony, delineates four conditions that lead to disastrous social engineering schemes: 1) an administrative ordering of nature and society; 2) high-modernist ideology, a hubristic belief in scientific and technological progress to achieve mastery over nature and society; 3) an authoritarian state willing to deploy coercive power to implement its schemes; and 4) a prostrate civil society too debilitated to resist the state's machinations.<sup>25</sup> Canada and the United States hardly satisfy the latter two conditions, and it is important not to conflate the social engineering schemes of authoritarian states with the Seaway project. However, high-modernist ideology is a transnational phenomenon that comports with the discourses manifested by the dominant envirotechnical regime. Carefully distinguishing the historical and cultural formations underlying high-modernism in the Seaway project's context, I explore how the abstracted view and designs of planners confronted environmental realities as well as local experiential knowledge.

Interestingly, as an illustration of *métis*, Scott singles out navigation as a “*métis*-laden” activity in which “responsiveness, improvisation, and skillful, successive approximations were required.”<sup>26</sup> Indeed, the navigation of the St. Lawrence before the Seaway required embodied knowledge of its currents, eddies, hazards, as well as its

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<sup>24</sup> For definition and illustration of these concepts, see: James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, CT: Yale University Press, 1999), 4-5, 337-339.

<sup>25</sup> *Ibid.*, 34.

<sup>26</sup> Scott cites Aristotle to make this point about navigation. *Ibid.*, 322.

seasonal and climatic variability. The people who embodied this knowledge understood the river through mental maps and tactile experience of the river's spaces. There is a fundamental disconnect between this kind of knowledge and the variety derived from planners' abstract models, which sought to make the river legible and rational.

My project highlights this epistemological disconnect. At the transnational scale, I delineate how Seaway discourse reconfigured the dynamics of Canadian-American relations; however, as the story proceeds, I connect transnational processes with local stories, and explore how a bi-national megaproject transformed spatial and social arrangements in local domains. In the final chapter, I build a narrative focused on the transformation of these communities' spatial practices, as well as the interactive patterns of day-to-day life. Investigating how local communities and individuals interfaced with larger institutions – such as the IJC, Seaway Authority, Seaway Development Corporation, Ontario Hydro, and the Power Authority of the State of New York – offers a nexus where transnational processes meet local concerns, and an opportunity to discern concrete connections between analytical scales.

### Archival Sources

Given the explicit transnational focus described above, my research encompassed archives on both sides of the Canadian-American border. The most important and extensive collection I visited is the *Seaway Collection* (Collection No.40) held at St. Lawrence University's Special Collections and Vance University Archives (SLU), located in Canton, NY. The collection's 92 boxes of archival material proved invaluable, especially for the final three chapters. The collection includes four subsets – the Mabee Series, the Sillcox Series, the St. Lawrence University Series, and the Reed Series – and a

wealth of Seaway related periodicals and newspapers, official materials distributed by responsible Seaway agencies (particularly PASNY and Ontario Hydro), as well as the records of individuals directly involved in the project. The Sillcox series proved uniquely illuminating because it contained hard to find materials produced by organized Seaway opposition.

I also spent a substantial period at the Northeastern Minnesota Historical Center (NEMHC), at the University of Minnesota-Duluth. The center holds several Seaway related collections, but two are worth specific mention: the records of the *Great Lakes-St. Lawrence Tidewater Association* (Collection S3040) and the *Julius H. Barnes Papers* (Collection S3025). Taken together, these two collections represent the most comprehensive compendium of material related to organized Seaway advocacy between 1919 and 1954. They include regular advocacy publications – *The Way to the Sea* and *Seaway News* – along with organizational minutes, internal reports, propaganda materials, and correspondence between individual American advocates as well as their Canadian organizational correlates. These records are central to construction of the third and fourth chapters.

Collections located at the Library and Archives Canada (LAC) and the National Archives and Records Administration (NARA) were also indispensable to this undertaking. At the LAC, I viewed the *Sir Robert Borden fonds* (MG26-H [R6133-0-X-E]); the *William Hamilton Merritt Papers* (MG24-E1 [(R3725-0-7-E)]); the *Office of the Governor General of Canada fonds* (RG7-G21 [R178-3-5-E]); the *George Christie Gibbons fonds* (MG30-E71 [R1999-0-1-E]); the *Daniel B. Detweiler fonds*, (MG30-A7 [R2312-0-0-E]); the *Privy Council Office fonds* (RG2 [R165-0-5-E]); the *Records of the*

*Department of External Affairs* (RG25 [R219-0-2-E]); and the *St. Lawrence Seaway Authority fonds* (RG52 [R1195-0-X-E]). At NARA, I relied heavily on the *Department of State Central Files* (RG 59), specifically under the decimal designations that denote materials related to Canada and the boundary waters (711.42157-SA and 611.42321-SL). I also found a number of relevant primary source publications at the Library of Congress (LoC): for example, records pertaining to the work of the IJC and the International Waterways Commission (IWC), materials distributed by Seaway advocacy groups, including the International Deep Waterways Association (IDWA) and the Great Lakes-St. Lawrence Tidewater Association (GLSLTA), as well as a wide variety of relevant Congressional publications. Finally, the Library of Congress's Manuscript Division contains the *Henry Justin Allen Papers* (Collection MSS50781), which I used extensively in the fourth chapter.

### Chapter Organization

The text below is divided into seven chapters, followed by a brief epilogue/conclusion. Chapter 1 – *An Inland Seacoast* – reframes the Seaway story to include its conceptual origins and prior incarnations. It describes a series of overlapping, competing, and evolving envirotechnical systems that facilitated competitive nation building processes, and contextualizes them within the dynamic relationship between the United States and a changing assortment of Canadian political configurations.

Chapter 2 – *A Deep Water Hymn* – explores the Seaway's inception as a bi-national political idea and the earliest organized, transboundary advocacy movement that advanced it. Linking Seaway advocacy to a Progressive era discourse centered on conservation, I explore Seaway advocacy and a transboundary network of environmental

knowledge, formalized under the auspices of conservation diplomacy. This chapter's denouement is the establishment of the International Joint Commission (IJC), which institutionalized conservationism and gave its proponents diplomatic machinery to advance their agenda, including the Seaway idea.

Chapter 3 – *Hydro-Powers* – considers the IJC's first foray into the Seaway question, and competing plans to make it a reality. The chapter's narrative presents a range of historical actors attempting to define and enshrine their perception of the "proper" uses and configuration of the St. Lawrence. If the river is to be remade, to what ends and whose benefit? I question the boundaries between advocacy and expertise, while inserting local voices and tactile experience into the narrative. Importantly, the river itself plays an active role in this story, particularly in the form of ice – a perennial concern of Seaway advocates and opponents alike.

Chapter 4 – *Selling the "Seaway"* – traces the evolution and prodigious activities of the Seaway advocacy movement between the two world wars. Focusing particularly on the Great Lakes-St. Lawrence Tidewater Association, notable for its longevity and influence, I delineate the tactics they employed, the discourse they cultivated in service of their arguments, and the opposition they confronted. Although their dream remained elusive, their activities and claims structured the discourse and campaign that facilitated the Seaway's official sanction.

Chapter 5 – *When the Seaway Goes Through...* – tells the story of two nations reluctantly forging an agreement to cooperatively construct the Seaway, and explores their changing participatory motives as well as the abstract outlines of the system devised. Already a mediated and intensively managed space, the Seaway agreement

primed the St. Lawrence for transformation on an unseen scale and for the imposition of a new envirotechnical system.

Chapter 6 – *The Eighth Wonder of the World* – recounts the physical construction of the Seaway: how two nations, nine government agencies, 22,000 workers, and an unprecedented amount of machinery collaboratively reshaped the St. Lawrence. I focus specifically, but not exclusively, on work undertaken on the International Rapids Section, where workers and planners confronted unexpected soil conditions, weather conditions, intense currents, and other environmental challenges to their abstract designs. This chapter engages the Seaway’s dimensions and transformative power, but also its transformation from an abstract idea to a concrete and hydrologic reality – an envirotechnical system that traverses boundaries between nations as well as technology and the environment.

Chapter 7 – *Après Nous, Le Déluge* – looks at the Seaway’s construction through another lens, the communities and river users displaced by its floodwaters. This chapter resides at the nexus where bi-national priorities confront local concerns. Here, I describe the disconnect between local uses/social needs and the nebulous but pervasive idea of progress through technological intervention, which is central to the envirotechnical regime that undergirds the Seaway system. The Seaway engendered a new social and environmental order, under which locals’ embodied sense of self and daily spatial practices seemed incongruent. I show how local identity is fundamentally tied to the social and physical geographies inhabited by people, and that the reconfiguration of these spaces elicits a corresponding crisis of identity. I further explore the unique experiences and responses of First Nations peoples swept up in the Seaway debate and project. In this

final chapter, locals confront, adapt to, and resist the imposition of a megaproject in their backyards.

Conclusions – *To Hell With Economics!* – closes my dissertation by retrospectively reassessing project's legacy – the social and ecological disruptions it engendered, its economic and technological (in)efficacy, unresolved tensions with First Nations communities, and recent proposals to augment the system's scale. I situate this legacy within the parameters of a dynamic envirotechnical regime and its evolving priorities and concerns. Finally, I bring the story back to its central concern – the boundaries drawn between cultures, technologies, and environments and their permeability.

In sum, this dissertation is principally about the transgression and reification of boundaries – between nations, environments and technologies, advocacy and expertise, as well as myth and materiality. I argue that the remaking of the Great Lakes-St. Lawrence simultaneously remade the communities that the system intersects; however, these transformations were culturally and historically contingent and proceeded unevenly. The Seaway's planners and managers have consolidated and naturalized a particular narrative that describes how the system came into being – one that emphasizes bi-national cooperation and mutual advantage. However, that story is too facile and ignores alternative possibilities, compromises struck, and perspectives marginalized in the process.

For example, all-Canadian alternatives and private development initiatives disappeared with the collaborative agreement, and my story considers these and other alternative conceptions of the proper use and configuration of the boundary waters. To

secure legislative approval, the range and composition of sanctioned uses and discourses evolved over 62 years of Seaway debate. Over this timeframe, advocates and planners made compromises with private capital, nationalistic interests, and between political entities to achieve their political objectives. By extending the Seaway story, I explore these lost conceptual formations and competing visions of the river. The marginalization of local perspectives and the erasure of their pre-Seaway spatial practices is a superlative example of the voices and praxis drowned out by the dominant Seaway narrative. My project illuminates the disconnects between visions of the river as constituted at different scales of action, the subjugation of ideas and practices out of step with the megaproject, and the forms of resistance enacted in response.

The Seaway presents an opportunity to question the importance of national boundaries in the reshaping of a shared aquatic environment. In a sense, these waters, which were central to competitive nation building processes in the 19<sup>th</sup> century, became a material and metaphorical space for nation bridging. The envirotechnical systems interspersed along the boundary waters created infrastructural networks that allowed for the construction of separate nation states, but conservation diplomacy and the Seaway project tempered nationalistic visions of shared waters and formalized cooperative management. However, this masks the border's disproportionate importance between Americans and Canadians. In the face of the Cold War and increasing American economic and cultural penetration into Canadian life, the boundary waters assumed multiple meanings across national and ideological lines. For American capital and cold warriors, it hardly seemed to matter – a political convention within a unified cultural, ideological, and economic zone. For Canadian nationalists, it meant everything – the last

bulwark in defense of a separate cultural identity. In the end, Canadian policy makers curbed nationalistic visions of the river to maintain stable and friendly relations with a more powerful southern neighbor; they traded a distinctly Canadian vision of the boundary waters for equal representation in the management of shared space. Local communities confronted the border in a more immediate way; it conditioned their movements and reified the distinctions drawn between similar peoples who inhabited opposing riverbanks. The river structured and defied these boundaries. It served as a space where Canadians and Americans confronted one another directly, fought over its development, and collaboratively reshaped it. The river has no politics but is profoundly political. It has been coopted to reify, compromise, and reconstruct boundaries and the identities they help configure.

Taking a longer view of the Seaway idea and project, including its conceptual and material antecedents, allowed me to consider how the boundary and its meanings have changed over time. The boundary, which delineated different communities, was imbued multiple and dynamic meanings. First, I trace the jurisdictional dynamism of political entities and water managers. For example, on the Canadian side, my story begins in Upper and Lower Canada, which were reconstituted as Ontario and Quebec in a confederated Canada. Moreover, the boundary changed from a British imperial limit to a border between North American nations. These political reorganizations simultaneously changed the boundary's meanings and the constituencies it divided. However, a central contribution of this work is the argument that this process was reciprocal, and boundary resource politics helped to reconfigure the relationships between the larger political communities represented. Questions over the development and conservation of the

boundary waters did not only react to political circumstances, but structured them.

Consequently, I argue the Great Lakes-St. Lawrence is an important historical case study because this boundary environment substantially revised the relationship between the nations it demarcated.

Finally, this project interrogates of the boundaries between the environment and technology. Using envirotechnical analysis, I question the permeability of the distinctions drawn between these categories, and question the power dynamics at play in the regime Canadians and Americans collaboratively constructed. I also look at the environmental features that make the St. Lawrence unique – its northern latitude, regularity of flow, and climatic variability – and how these informed its envirotechnical transformation. Envirotechnical analysis allowed me trace the interplay between environmental and technological forces across space and time. This produced a view of the Seaway that challenged the conception of a singular technological system imposed on the boundary waters, and replaced it with an integrative process that amalgamated and transformed multiple, overlapping, and often competing systems. It also revealed that the environment remained an omnipresent actor in the river's continued technological transformation. For example, the technologies deployed in Seaway construction had to accommodate and compromise with soils, climate, and hydraulic pressures. Technological intervention did not overcome the river but crafted systems that obscured conceptual distinctions drawn between the river's natural and technological features. The corollary idea of envirotechnical regimes allowed me to assert power relationships into this story and to consider the forces compelling or arresting development, as well as those that sustain and constitute the system as normative.

By examining complex relationships between Canadians, Americans, and the Great Lakes-St. Lawrence River, my work advances the scholarly discourse and public understanding of water and rivers in U.S. and Canadian history. As questions of access to and distribution of scarce water resources as well as debates over riverine development and channelization accrue global significance, I hope to contribute to this conversation by offering an important case study of a river and its peoples. The Seaway engendered new bonds between these peoples, but simultaneously erected new barriers, between communities and their river, as well as each other.

## Chapter 1

### *An Inland Seacoast*

In the spring of 1842, Charles Dickens travelled to North America and recorded his impressions and observations in *American Notes for General Circulation*. His experience on the Great Lakes began at Sandusky, Ohio where he boarded a steamship “of at least five hundred tons, and handsomely fitted up, though with high-pressure engines...[and] laden with flour, some casks of which commodity were stored upon deck,” bound for Buffalo where its cargo would ostensibly be transshipped down the Erie Canal.<sup>1</sup> At Buffalo, Dickens disembarked and anxiously set out by rail to see the Great Falls at Niagara. His impression of the Falls evokes feelings of natural sublimity, as described by David Nye in *American Technological Sublime*. Nye claimed that the test for sublimity is to “observe whether or not an object strikes people dumb with amazement,”<sup>2</sup> which Dickens captures evocatively: “I began to feel what it was: but was in a manner stunned, and unable to comprehend the vastness of the scene.”<sup>3</sup> A transcendent moment followed his confounded state, and he described it as: “Instant and lasting – of the tremendous spectacle... Niagara was once stamped upon my heart, an Image of Beauty; to remain there, changeless and indelible.”<sup>4</sup> For Dickens, Niagara meant a transcendent space and a spiritual experience; for others, the chief protagonists of this story, the Falls represented a barrier to commerce and their ambition, and they expended vast sums of capital and energy to circumvent this obstruction. Niagara left an

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<sup>1</sup> Charles Dickens, *American Notes for General Circulation* (New York: St. Martin’s Press, 1985), 180.

<sup>2</sup> David Nye, *American Technological Sublime* (Boston: MIT Press, 1996), 16.

<sup>3</sup> Dickens, *American Notes*, 182.

<sup>4</sup> *Ibid.*, 182.

indelible impression on Dickens, but others co-opted and transformed it, harnessing its energy for human ends, and forever altering its character.

Departing Niagara, Dickens travelled by road below the falls to Queenston, ON, and boarded a second steamship destined for Toronto. At the mouth of the Niagara River he presciently observed: “the stars and stripes of America flutter on one side, and the Union Jack of England on the other: and so narrow is the space between them that the sentinels in either fort can often hear the watchword of the other country given.”<sup>5</sup> The river’s transnational character confronted Dickens, reinforced by the proximity of defensive structures that suggested unsettled relations across the border.

Dickens stopped at Toronto and boarded another steamship to Kingston, making calls at Port Hope and Cobourg to collect “vast quantities of flour [which] form the chief freight of the vessels.”<sup>6</sup> At Kingston, he continued downstream along the St. Lawrence, remarking: “the beauty of this noble stream at almost any point, but especially in the commencement of this journey, when it winds its way among the thousand Islands, can hardly be imagined.” The steamboat shot a series of rapids “where the river boiled and bubbled strangely, and where the force and headlong violence of the current were tremendous.” However, the rapid’s growing intensity near the Long Sault forced the passengers to disembark and proceed overland by stagecoach: “the navigation of the river being rendered so dangerous and difficult in the interval, by rapids, that steamboats do not make the passage.”<sup>7</sup> Dickens repeated this portage experience on two further occasions around the Soulanges and Lachine Rapids.

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<sup>5</sup> Ibid., 187.

<sup>6</sup> Ibid., 188.

<sup>7</sup> Ibid., 189.

In the end, Dickens left Canada with a favorable impression, somewhat in contrast to the ambivalence he felt about the United States. A set of cultural dispositions mediated his experience at Niagara Falls. For Dickens, the Falls engendered a spiritual experience, evidenced the majesty of creation, and constituted transcendent space where man could glimpse the divine. Ultimately, Dickens was an interloper in this region, and those who lived and worked along the Great Lakes-St. Lawrence forged different relationships to its waters, conditioned by their own cultural dispositions and tactile experiences.

Dickens' travels along the Great Lakes-St. Lawrence elucidates several salient features of the region: the power of the river, and its indelible reminder at Niagara Falls; an uneasiness pervading Canadian-American relations; the river as a transnational space where these sometimes turbulent relations played out; the movement of staple commodities from the interior toward market; and the haphazard conditions of Great Lakes-St. Lawrence navigation, a journey characterized by diverse transportation modalities – over water, rails, and roads.

During the 19<sup>th</sup> and 20<sup>th</sup> centuries, Americans and Canadians competitively remade and reconceived the contested transnational spaces Dickens encountered. Geologic and climatic forces continuously reshape the Great Lakes and St. Lawrence, as did the movement and activities of First Nations peoples, Voyageurs, and European settlers. However, 19<sup>th</sup> century planners and boosters' broadening ambition amplified the scale and pace of transformation. The steamboats that carried Dickens, the navigation channels they traversed, the commodities they conveyed, and their ports of call are all features of competitive and overlapping envirotechnical systems. This amalgam of

technological artifacts were inextricably embedded in specific social and ecological contexts that informed the range of technological possibility.

The intertwining of the technological and environmental is evident when the steamship carrying Dickens shot the rapids downstream of the Thousand Islands – relying on the force of the river and the environmental, place-specific expertise of the crew to navigate it. At this nexus, the boundaries of the steamboat’s technological identity became increasingly blurry – an artifact embedded in an envirotechnical system. This entwining is also apparent further downstream. At the place where the Long Sault and subsequent rapids made the river impassable, people established portages to bypass portions of river considered unsuitable for navigation. These portages are nexuses where the power of the river confronted human capacity to subdue it. In this case, the river prevailed and human actors constructed a parallel system to circumvent it – a superlative example of environmental constraints on the range of contemporary technological possibility.

This chapter explores the intertwining of the social, technological, and environmental features that underpinned the earliest attempts to connect the Great Lakes with the Atlantic for the purposes of navigation. It connects the systems constructed with 19<sup>th</sup> century nation building programs and an evolving relationship between Canada and the United States. In an era punctuated by antagonism between these communities, the boundary waters unexpectedly became a space to promote shared values and cooperative development of their navigable potential – a canvas to project a transboundary dream. In the earliest decades of the 20<sup>th</sup> century, there was a strong correlation between the

collaborative desire to “improve” nature and the incremental improvement of transboundary relations. Here, the origins of both phenomena are investigated.

Unqualified, the term “improvement” is loaded with a progressive connotation. Here, it is used reflectively, with the historically and culturally contingent meaning imbued by the story’s human protagonists. Robert Friedel’s *A Culture of Improvement* (2007) usefully describes “improvement” as: contingent, possible at all levels of action, and ephemeral or sustained. In short, Friedel argued that the belief that “things could be done better” is pervasive, even axiomatic in the West and a powerful historical force.<sup>8</sup> Accordingly, most of this story’s human actors believed that nature could and should be improved through the technological means available to them. However, their improvements were not universal, and privileged certain activities, groups, values, and biota over others.

Ultimately, this chapter argues that the Seaway is greater than a mid-20<sup>th</sup> century megaproject. It is an idea with a long contested history; the amalgamation of a series of overlapping envirotechnical systems constructed and reconfigured over nearly two centuries. To understand the Seaway we must confront its discursive origins and envirotechnical antecedents.

### *Early Human and Historical Interventions*

The earliest known effort to construct canals along the St. Lawrence occurred in 1689, when Dollier de Casson, the Superior of New France’s Catholic Suplican Order, proposed building a canal around the Lachine Rapids to supply waterpower to gristmills

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<sup>8</sup> Friedel’s introduction “Technology and Improvement” (pages 1 through 12) provides an excellent survey of approaches to the history of technology and a useful summary of his approach to the nature of technological change. Robert Friedel, *A Culture of Improvement: Technology and the Western Millennium* (Boston: MIT Press, 2007), 2-4.

and provide a navigable alternative for canoes. Dollier de Casson's efforts failed after several Iroquois raids halted construction and incompetence led to flooded fields rather than a canal. Over the following century and half the rapids remained impassable, and a heavily travelled portage conveyed people and goods across the Island of Montreal.<sup>9</sup>

During the War of American Independence, Loyalist soldiers excavated three shallow and narrow canals, six feet wide and two and a half feet deep, around the Soulanges rapids, a stretch of about 13 miles between Lake St. Louis and Lake St. Francis. Completed in 1783, these rudimentary canals allowed bateaux – long, narrow, flat-bottomed, shallow-draft boats – to bypass the rapids and navigate upstream above Montreal. The passage was onerous, with rudimentary facilities that required bateaux to off-load their passengers and much of their cargo while horses or mules towed the bateaux through the canals and locks. Crudely designed, but capable of lifting the bateaux 15 feet, these canals housed the first locks built in North America.<sup>10</sup> They also formed an early North American envirotechnical canal system, inextricably linking the organic with the technological.

This linkage is most conspicuous at the locks' towpaths where people harnessed the energy of animals to move bateaux through their technological artifacts. The system encompassed more than the locks and channels dug by Loyalist soldiers; it included a range of human and nonhuman actors deployed in its construction and operation. The military purposes underscoring its construction are embodied in its configuration and

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<sup>9</sup> For a description of the location, conditions, and economic/transportation importance of the Montreal portage (Lower Lachine Road or *Chemin de la Côte Verdun*) see the following. The portage fell into disuse after 1825 and the completion of the first Lachine Canal. Presently, Boulevard LaSalle occupies the former site of the portage: Edgar Andrew Collard, "Roadway into History," *Montreal Gazette*, June 23, 1984, Section B-2.

<sup>10</sup> For a description of these early canals see: L'abbé Elie J Auclair, "La Région du Soulanges et son Canal," *Royal Society of Canada, Délibérations et Mémoires de la Société Royale du Canada*, 1937, Series 3, Vol.31, Section 1 (Ottawa: Royal Society of Canada, 1937), 35-50.

strategic placement; the lockmaster and a set of established practices governed its operation; the bateaux crews along with horses and mules expended the energy required for its use; and the river itself facilitated or impeded passage, contingent on direction. These short, narrow, and shallow canals seem diminutive in the context of the structures that currently occupy the space, but they are a significant envirotechnical intervention in the St. Lawrence. Loyalist soldiers sought to facilitate the movement of supplies upstream for strategic purposes, but they simultaneously embedded technological artifacts, a set of social and spatial arrangements, and a range of actors – human and nonhuman – into a new envirotechnical system that reconfigured the landscape.

The earliest efforts to improve the navigability of the St. Lawrence reflect the River's centrality to the economic and political life of British North America. Canada, as a distinct polity, did not exist at the turn of the 19<sup>th</sup> century. Following the American War of Independence, the Constitutional Act of 1791 reorganized Britain's remaining North American territorial possessions into a series of new administrative regions. The Act divided the Province of Quebec into Upper and Lower Canada to accommodate the settlement of nearly 10,000 United Empire Loyalists who left the United States in the war's aftermath. Their names referred to their relative position along the St. Lawrence and regional hydrology structured their boundaries. Upper Canada's borders roughly followed the northern watersheds of the Great Lakes (excluding Michigan) and St. Lawrence River, with the Ottawa River delineating its eastern limit. Lower Canada was located downriver, bounded by the Ottawa River and Atlantic Ocean. The two Canadas

reunited in 1841 under the terms of the Act of Union of 1840, an effort to reinvigorate the commercial dream of the “Empire of the St. Lawrence” described by Creighton.<sup>11</sup>

The movement of agricultural staples – principally wheat, flour, potash, timber, and previously the fur trade – through this artery to the markets of Great Britain, provided the basis of the colonies’ economic vibrancy during the first half of the 19<sup>th</sup> century.<sup>12</sup> However, confronted by the loss of preferential tariffs – i.e. the repeal of the Corn Laws – and the glutting of British markets, Upper Canadian merchants sought alternative outlets, placing them in direct competition with their American counterparts.<sup>13</sup> This competitive mercantile capitalism structured the envirotechnical regime that sustained the interior canal systems of the 19<sup>th</sup> century. It engendered an economic and discursive imperative to move commodities from interior hinterlands to intermediary transshipment points, and onward to Europe’s metropolitan markets. The projection of European capital’s power into the North American interior defined the conditions compelling and normalizing the reconfiguration of its waterways to facilitate trade.

Within this competitive climate, the early Canadian colonies had a fraught relationship with the United States, exacerbated by proximity, colonial status, and two recent wars fought along their margins. Historian Hugh Aitken argued that it is not surprising that the principal battles of the War of 1812 occurred along Upper Canada’s borders, although the ports of Montreal or Quebec possessed more apparent strategic value. According to Aitken, Upper Canada possessed the “keys to the British truck line of communications to the interior,” located at Niagara and Detroit, which served as

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<sup>11</sup> Creighton, *The Empire of the St. Lawrence*, 340, 349.

<sup>12</sup> Hugh G.J. Aitken, *The Welland Canal Company: A Study in Canadian Enterprise* (Cambridge: Harvard University Press, 1954), 12-14.

<sup>13</sup> Creighton, *The Empire of the St. Lawrence*, 241-243.

bottlenecks to Great Lakes trade. If the United States could control these two points, they would capture Britain's interior commerce.<sup>14</sup> However, British Regulars and the Upper Canadian Militia consistently repelled the United States' military advances and successfully defended the peninsula.

### *The Erie Challenge*

An alternative approach succeeded the American military's inability to capture the critical sites and control western trade. Constructed between 1817 and 1825, the Erie Canal prevailed where military intervention had failed, by connecting Lake Erie to the Atlantic via the Hudson River. This route selection appears curious since connecting the Hudson to Lake Ontario, via the Mohawk and Oswego Rivers, would have been shorter, more familiar, easier, and cheaper.<sup>15</sup> Elkanah Watson, perhaps the originator of the waterway's idea, acknowledged the apparent lunacy of the longer Erie route, suggesting: "we should not have considered it much more extravagant to have suggested the possibility of a canal to the moon."<sup>16</sup>

Begging the question: what intervening considerations led to the selection of this route over the shorter more economical alternative terminating at Lake Ontario? Governor DeWitt Clinton's "Memorial to the Citizens of New York" makes the case for the Erie connection clear. He claimed that the failure of military conquest against Upper Canada meant that Montreal would control the trade of Lake Ontario, since the St. Lawrence was the "course ordained by nature."<sup>17</sup> Moreover, the Oswego-Mohawk-

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<sup>14</sup> Aitken, *The Welland Canal Company*, 17.

<sup>15</sup> *Ibid.*, 18.

<sup>16</sup> "Tacitus" (De Witt Clinton), *The Canal Policy of the State of New York: Delineated in a Letter to Robert Troup, Esquire* (Albany, 1821), 18-19.

<sup>17</sup> DeWitt Clinton, "Memorial of the Citizens of New York," in David Hosack, *Memoir of De Witt Clinton: With an Appendix Containing Numerous Documents Illustrative of the Principal Events of His Life* (New York: J. Seymour, 1829), 406-421. The St. Lawrence quote is found on page 413.

Hudson route would necessitate the construction of a canal around Niagara Falls to reach the upper lakes and move cargoes into Lake Ontario, where they could be diverted down the St. Lawrence. In short, Erie route advocates wanted to maintain Niagara Falls as a barrier to British trade, while capturing interior production for New York by reaching behind the Falls.

In this memorial, DeWitt Clinton made another salient observation, to which the Seaway debate would often return. He contrasted New York's harbor with the St. Lawrence, which is "generally locked up by ice seven months in the year."<sup>18</sup> Adding, the Hudson and Erie Canal "afford a navigation that cannot be equaled by the St. Lawrence, with its rapids, dangers, and obstructions."<sup>19</sup> The geographic, geomorphic, and climatic advantages of a canal headed southward appeared obvious to the Erie's proponents.

The Erie Canal was an unqualified technological and commercial triumph. It drastically reduced transportation costs – for example, moving a ton of grain from Buffalo to New York dropped from approximately \$100 to \$9 – and succeeded in reorienting interior trading patterns toward New York.<sup>20</sup> Historian Carol Sheriff argued: "It compressed distance and time in ways that had previously seemed impossible."<sup>21</sup> The process of time and space compression is a central feature of capitalism's continued expansion across landscapes and appropriation of resources. This compression is recurrent and compounded by subsequent systems; another structural element normalized and entrenched by ensuing envirotechnical regimes. The Canal fundamentally altered the

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<sup>18</sup> Ibid., 413.

<sup>19</sup> Quoted in: Aitken, *The Welland Canal Company*, 20.

<sup>20</sup> These figures are quoted in: Ruth Schwartz Cowan, *A Social History of American Technology* (New York: Oxford University Press, 1997), 105.

<sup>21</sup> Carol Sheriff, *The Artificial River: The Erie Canal and the Paradox of Progress, 1817-1862* (New York: Hill and Wang, 1996), 3-4.

pace of life in nearby communities and revised the region's spatial arrangements. It compelled industry and communities to locate along its banks and points of transshipment to service the movement of people and goods. The Erie increased mobility and interaction, normalizing a new tempo, but locals found these changes double-edged, fostering prosperity as well as disruption.

The Erie wrought concurrent transformations to the surrounding environment. The first in a long history of large-scale human interventions into the Great Lakes system, the Canal's construction displaced the dirt and rock in its path, altered the course of tributary streams, and overcame a 680-foot elevation change through a series of 83 locks. To supply the Canal with water, workers constructed feeder canals at Forestport, NY. Viewed in retrospect, this extra-basin diversion of Great Lakes water established a highly contentious precedent, which proponents of Chicago's controversial 20<sup>th</sup> century diversions invoked to defend their actions.<sup>22</sup> Perhaps most infamously, the corridor they opened for navigation simultaneously allowed the introduction of new species into the Great Lakes, such as the Sea Lamprey, a biotic legacy that resource managers continue to grapple with today.

To contemporaries, the Erie appeared to have defied or outwitted nature through human effort and ingenuity. Retrospectively, the unqualified celebration of engineering over nature collapses, and the distinction between the two seems illusory.<sup>23</sup> The Erie transformed nature, but did not overcome it. The intensities of climate continued to

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<sup>22</sup> The feeder-canal diversion at Forestport is extremely small by contrast to Chicago's diversions for the Sanitary and Ship Canal, especially in the early 20<sup>th</sup> century. In fact, the diversion at Forestport averaged about 50 cubic feet per second (cfs), whereas in 1922, the Chicago Sanitary and Ship Canal diverted 8,500 cfs (reduced to 1,500 cfs by a Supreme Court decision in 1930, and then increased to 3,200 cfs in 1967). See: Peter Annin, *The Great Lakes Water Wars* (Washington, DC: Island Press, 2006), 65, 91-96.

<sup>23</sup> Allusion to the title of: Stephen Cutcliffe and Martin Reuss, eds., *The Illusory Boundary: Environment and Technology in History* (Charlottesville, VA: University of Virginia Press, 2010) – referenced in the introduction.

govern the navigable season and, like the Soulanges, the operation of the lock's towpaths relied on energy expended by horses. The Erie is not wholly artificial or natural, but symbiotic, an envirotechnical system.

The technological and commercial success of the Canal masks the labor force deployed in its construction. The project mobilized an unprecedented number of wage-labor canal workers; and their stories, silenced by triumphalist accounts, have been elucidated by the work of Sheriff and historian Peter Way.<sup>24</sup> Characterized as a triumph of humans over nature, the environment they worked to transform often extracted a heavy human cost. In addition to backbreaking toil and hazardous working conditions, laborers encountered perils such as quicksand and rampant disease.<sup>25</sup> The artifacts they left hide the human cost incurred.

The Erie exemplifies the transportation revolution and nation building program known as the era of "internal improvements."<sup>26</sup> Secretary of the Treasury Albert Gallatin's 1807 report on canals and roads laid out an ambitious national program of internal transportation improvements – including the construction of a canal from the Hudson to Lake Ontario. However, ambiguity over federal constitutional authority to carry out this program encouraged state-level initiatives.<sup>27</sup> The Erie Canal became the superlative example of a successful internal improvement undertaken at the state-level

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<sup>24</sup> Peter Way, *Common Labour: Workers and the Digging of North American Canals, 1780-1860* (Cambridge, UK: Cambridge University Press, 1993).

<sup>25</sup> Sherriff gives no stats on the number of injuries/deaths, but, anecdotally, it seems substantial. Sheriff, *The Artificial River*, 44. A description of the challenges quicksand presented is available in: Way, *Common Labour*, 138-139.

<sup>26</sup> Douglas E. Clanin, "Internal Improvements in National Politics," *Transportation and the Early Nation* (Indianapolis, IN: Indiana Historical Society, 1982), 30-60; G.R. Taylor, *The Transportation Revolution, 1815-1860* (New York: Holt, Reinhart, and Winston, 1964); and John L. Larson, *Internal Improvement: National Public Works and the Promise of Popular Government in the United States* (Chapel Hill, NC: University of North Carolina Press, 2001).

<sup>27</sup> Albert Gallatin, *Report of the Secretary of the Treasury on the Subject of Public Roads and Canals* (Washington, DC: William A. Davis, 1816). For his discussion on the proposed Hudson-Ontario canals and around Niagara, see pages 42-53; and Cowan, *A Social History of American Technology*, 94.

and at public expense. Nation builders viewed it as the physical and symbolic expression of commercial and political success through waterway improvement, and a model to emulate across the United States.<sup>28</sup> Constructing the Erie, materially and metaphorically, helped build America.

### *The Canadian Response*

The Erie story provides important historical and conceptual context for subsequent efforts to reshape the Great Lakes-St. Lawrence. The Erie succeeded in effectively destroying the commercial empire of Montreal, and New York supplanted it as the primary continental outlet for interior trade. The most serious obstacle to the reclamation of this lost trade was not the St. Lawrence's rapids but internal division among the Canadian colonies; specifically, the French dominated Assembly of Lower Canada, a group perennially unsympathetic to the aspirations of the English mercantile community.

Following the War of 1812, the British imperial government confined its construction efforts to the Rideau Canal (completed in 1832), which connects Kingston to Montreal by way of Ottawa, and served as a communication and logistical failsafe in the case of renewed armed conflict with the United States. This specter of future conflict also yielded an uncharacteristic canal building initiative pursued by the normally intransigent Assembly of Lower Canada. In 1815, it authorized £25,000 for the

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<sup>28</sup> The Canal also provided a venue for training a new group of technological elites – an American “school of general engineering” whose students applied their lessons and techniques across America and beyond; and it contributed to the development of a “regional technological style”, as described by Thomas P. Hughes. Moreover, The engineers most famously associated with the project – Benjamin Wright, Canvass White, and James Geddes – began self-trained amateurs, but gained the admiration of peers at home and abroad, translating their expertise into a transnational phenomenon. See: Elting Morison, *From Know-How to Nowhere: The Development of American Technology* (New York: Basic Books, 1974), 35-39; and Thomas P. Hughes, *Networks of Power: Electrification in Western Society, 1880-1930* (Baltimore: Johns Hopkins University Press, 1983), 405.

construction of a canal around the Lachine Rapids. By 1821, the government had purchased all the private equity in the company incorporated to build the canal, and constructed it as a public work. Completed in 1824, the Lachine canal cost over £109,000 – of which the British contributed £12,000 – and had seven locks, 100 feet in length, 20 feet wide, and five feet deep. This project circumvented the rapids that halted the earliest European explorers, frustrated the voyageurs, and thwarted the canal dreams of Dollier de Casson in the 17<sup>th</sup> century.

With British attention focused elsewhere and the habitually obstinate Lower Canadian Assembly undertaking efforts to improve St. Lawrence navigation at Montreal, the commercial elites of Upper Canada unilaterally attempted to confront the challenge posed by the Erie. More specifically, a small group of Loyalist settlers on the Niagara peninsula, led by William Hamilton Merritt, took up the task.

Born in 1793, in Westchester County, NY, William Hamilton Merritt moved to the Niagara peninsula at the age of three, after his father and uncles fought for the British during the Revolutionary War. In 1812, he volunteered to fight in the Upper Canadian Militia, was captured during the Battle of Lundy's Lane and confined in a Massachusetts prisoner camp for the war's remainder.<sup>29</sup> When Charles Dickens stood at Niagara Falls he evinced a Romantic sentiment about a transcendent experience in nature. William Hamilton Merritt did not share this Romanticism. Ambitious, assiduous, and seemingly tireless in his many endeavors, the papers he left and contemporary accounts reveal

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<sup>29</sup> The hostility of the Loyalists is specifically noted in: Hugh L. Keenleyside and Gerald S. Brown, *Canada and the United States: Some Aspects of their Historical Relations* (New York: Alfred A. Knopf, 1952), 45-46.

virtually no sense of sentimentality or humor. Merritt approached nature instrumentally; and the Falls, which entranced Dickens, represented a barrier to be circumvented.<sup>30</sup>

Merritt was a very active entrepreneur, and by 1816, accumulated an extensive range of property holdings and established a series of vertically integrated commercial endeavors – supplying his general store with products from his manufacturing activities.<sup>31</sup> These ventures required a steady supply of waterpower from Twelve Mile Creek, and despite his efforts at vertical integration, the solvency of the general store required interaction with commercial interests at Montreal. In a typical arrangement, Montreal-based merchants transshipped goods, received on credit, up the St. Lawrence and across Lake Ontario to stock Merritt's store. Inversely, staple goods traveled downriver to Montreal for export, and accounts were settled at year's end. This commercial arrangement entangled the livelihood of Upper Canadian merchants, like Merritt, with the movement of commodities along the lakes and river, and their production was contingent on waterpower.

After a serious drought in 1818, Merritt and his neighbors proposed cutting an irrigation ditch from the Welland River to the headwaters of Twelve Mile Creek, to supplement its flow and regulate its seasonal variability.<sup>32</sup> The modest proportions of this

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<sup>30</sup> Merritt referred to the Falls as the “only natural barrier of importance” to the line of communication between Lakes Erie and Ontario. Quoted in: J.P. Merritt, *Biography of the Hon. W.H. Merritt, M.P., of Lincoln, District of Niagara, Including an Account of the Origin, Progress, and Completion of some of the Most Important Public Works in Canada* (St. Catharines, ON: Leavenworth Printing, 1876), 65. Merritt's lack of Romanticism has also been noted in: Aitken, *The Welland Canal Company*, viii.

<sup>31</sup> Upon returning home from the war, he entered a partnership with his brother-in-law, Charles Ingersoll, opened a general store in St. Catharines, ON, bought a farm, and a mill site on land that adjoined his father's property along Twelve Mile Creek. He constructed a milldam, a sawmill, a flourmill, a distillery, a potashery, a copper shop, a smithy, and five dwellings for employees, and drilled for salt. A description of Merritt's business ventures can be found in: J.P. Merritt, *Biography of the Hon. W.H. Merritt*, 40-42.

<sup>32</sup> Merritt's field notes of a survey, conducted on September 18, 1818, which informed this proposal are preserved in: Ottawa: Library and Archives Canada (LAC), *William Hamilton Merritt Papers, 1801-1862*, MG24-E1, Vol.28, Reel C-7064, “William Hamilton Merritt Subject Files.” The survey of an alternative route that followed the Chippewa River was conducted on September 28, 1818.

simple irrigation project quickly broadened and within a month, at a public meeting at Niagara in September 1818, the proposal appeared transmuted from a small ditch to a canal capable of carrying boats across the Niagara peninsula.<sup>33</sup> The imaginative leap from irrigation to transportation would not have been difficult. The Erie's ongoing construction foregrounded the subject of Great Lakes transportation, and proponents of the Welland Canal framed it in distinctly competitive terms.<sup>34</sup> In short, the Welland petitioners argued that their project would counteract the Erie's anticipated effect and recapture western commerce for the Canadian colonies.

On both sides of the border, this competitive spirit permeated discussions about internal navigation along the Great Lakes-St. Lawrence. The Assembly of Upper Canada called Merritt's petition a "matter of great National Importance," and the examining committee's report favored the scheme, but left its execution to private enterprise. The absence of public funds prevented the project's immediate commencement, but interest in Great Lakes-St. Lawrence navigation improvements persisted in the Assembly. Given the specter of the Erie Canal, it claimed: "if both Canadas availed themselves of the means they have to carry the same at a smaller expense and in a shorter time by the natural outlet of the St. Lawrence."<sup>35</sup> However, recurrent reaffirmations seemed empty gestures without action; as Hugh Aitken remarked: "[if] reports and resolutions alone

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<sup>33</sup> The Niagara meeting was on September 18<sup>th</sup>, 1818. Upper Canada, Assembly, *Journals: Tenth Report*, November 4, 1818 (Toronto: Bureau of the Archives of the Province of Ontario, 1913-1914), 50-51.

<sup>34</sup> Merritt's original petition requesting funds for a scientific survey of the proposed route, submitted to the Upper Canadian Legislature on October 14, 1818, clearly states – "The grand object of the American people appears to be opening a navigation with Lake Erie, which design our canal, if effected soon, would counteract; and take down the whole produce from the Western country." See: *Ibid.*, November 17, 1818, 73.

<sup>35</sup> For reaffirmations of the Assembly's continued interest and proclamations, see: *Ibid.*, March 10, 1818, October 30, 1818, November 4, 1818, and November 17, 1818, 50-51, 73.

could have built canals, Upper Canada would have had no need to fear the competition of ‘Clinton’s ditch.’”<sup>36</sup>

Although the proposed works remained unconstructed, this discourse marks an important change. The political and commercial elites of Upper Canada began to reconceptualize the Great Lakes-St. Lawrence as a system to move commodities and create wealth, ordained by nature but contingent on transformation by men. A notion of “perfectible nature” through human intervention became an ethos underlying the physical transformation of this hydrologic environment. Similar to Richard White’s protagonists in the *Organic Machine*, these Upper Canadian elites evinced a proto-Emersonian view of nature. They discursively reconciled the utilitarian and idealistic, the practical and spiritual, believing that “when humans acted on nature they did not defile it, they purified it.”<sup>37</sup> Merritt had little use for idealism, but this discourse was central to naturalizing large-scale envirotechnical intervention. Although our actors would not recognize the term, they advocated a perspective that blurred the boundaries between nature and technology. They did not see technological intervention as fundamentally unnatural; to them, nature was not lost through the interposition of technological artifacts, but could be perfected through human activity. This discourse was also an important constituent of an emergent envirotechnical regime, and the dissemination of discourse focused on nature’s perfectibility sustained and buttressed the construction of a series of envirotechnical systems that populated the Great Lakes-St. Lawrence basin over the 19<sup>th</sup> century.

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<sup>36</sup> Aitken, *The Welland Canal Company*, 34.

<sup>37</sup> Technically, these elites preceded the works Ralph Waldo Emerson (1803-1882), but their comments reflect White’s interpretation of his views. Richard White, *The Organic Machine: The Remaking of the Columbia River* (New York: Hill and Wang, 1995), 35.

The Assembly's remarks also contained overtones of the same nation building discourse that underscored the Erie Canal. Like the Gallatin Report, they recognized the centrality of water navigation to national economic and political cohesion. Although not formally nation states, Upper and Lower Canada's continued existence as distinct polities seemed contingent on the expansion of internal navigation to facilitate commerce. The Assembly described the Welland project as a matter of "National Importance," because they believed it would advance a process akin to nation building in the Canadian colonies. In a sense, the canal construction program that followed created infrastructural conditions that allowed the political construction of a Canadian state and an integrated national economy. This notion inverts conventional ideas about nation building. Perhaps, in the Canadian context, infrastructure networks acted as a precondition for nationalism, instead of a process that reified existing political realities. Canada's self-identification as a community structured around the St. Lawrence, evidenced by Creighton's work, may be a consequence of the River's canalization; not the inverse.

### *Constructing the Welland Canal*

The Assembly of Upper Canada did not devote funds to Merritt's project and was internally divided over expending public monies on canals. Likewise, the British did not furnish assistance and confined their work to the Rideau as well as financial and technical assistance to the Lachine Canal project. As a result, the Welland idea languished for years, but Merritt's ambition and the problem of erratic stream-flow on Twelve Mile Creek persisted. After commissioning a survey, which declared Twelve Mile Creek to be part of the optimal route for the proposed canal, Merritt formally presented his project to the Lieutenant Governor in June of 1823, asking for a charter and authorized

capitalization of £25,000.<sup>38</sup> The Lieutenant Governor assented in January 1824 and officially incorporated the Welland Canal Company.<sup>39</sup>

Retrospectively, Merritt's original plan for the Welland was patently absurd. Capitalized by modest contributions from Merritt and his allies, the Company had an approved capital ceiling of only £25,000, which was quickly raised to £40,000.<sup>40</sup> The surveyed route was not the most expeditious or simplest to construct, but passed through stakeholders' properties along Twelve Mile Creek; and the notion that the Company could privately raise the necessary capital in Canada quickly proved untenable. Shortly after receiving legislative approval, Merritt traveled to solicit sufficient Canadian investment, but failed. In the fall of 1824, he travelled to New York City to seek American capital. American investors hoped the Welland would alleviate potential shipping bottlenecks on Lake Erie by sending vessels into Lake Ontario and onto New York through an Oswego Canal, the Lower Erie, and Hudson. Merritt succeeded in securing considerable investments in the project. After acquiring the promise of American capital, Merritt travelled to places along the Erie Canal's route, promoting employment opportunities for skilled labor, and thereby procuring American experience and equipment for the Welland. In the end, the mobilization of American expertise and equipment proved as crucial as American capital to the project.<sup>41</sup> Although conceived

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<sup>38</sup> An engineer named Henry Tippet conducted the survey in May 1823, and Merritt formally submitted his petition on June 2, 1823. Aitken, *The Welland Canal Company*, 39-40.

<sup>39</sup> The Company was incorporated on January 19, 1824. William H. Merritt, *Brief Review of the Origin, Progress, Present State, and Future Prospects of the Canal*, 1852, (Reprint, Ithaca, NY: Cornell University Library, 2009), 3.

<sup>40</sup> The increase in capitalization to £40,000 was accompanied by rules governing the division of shares, named a board of directors, and included provisions for eventual government purchase of the company. See: Hugh G.J. Aitken, "Financing the Welland Canal: An Episode in the History of the St. Lawrence Waterway," *Bulletin of the Business Historical Society*, Vol.26, No.3 (September, 1952), 136-137.

<sup>41</sup> Merritt entered into provisional agreements with two large contracting firms – Ward & Horvey of Montezuma and General Beach of Rochester. He also received a recommendation from Benjamin Wright

under the auspices of a quasi-nationalistic appeal to compete with the Erie, American capital substantially funded the Welland, and the project profited greatly from the Erie experience.<sup>42</sup>

Merritt claimed that the Welland project marked the inauguration of a much larger effort to join the Great Lakes to the Atlantic Ocean via the St. Lawrence. The Welland, he contended, would remove “the only natural barrier of importance – the Falls of Niagara,” and “the rapids between Prescott and Lachine” would surely follow.<sup>43</sup>

Recognizing the boldness of his assertion, he drew parallels to the Erie Canal:

“I verily believe it to be as great a national object to the Province as the Erie Canal to the State of New York. They have appropriated £8,000,000 for the connecting of Lake Erie with the Hudson River or the Ocean, we will effect the same object for one fiftieth part of the money, and will reap equal if not superior advantages by the Welland. This Canal is the commencement of a similar undertaking; it is the most important link in that chain of communication – we hope to see effected within three years... When we contemplate the natural advantages we possess over the Americans in our water communication, it is astonishing to think of the apathy and indifference that has hitherto prevailed amongst us on this subject.”<sup>44</sup>

In 1824, Merritt articulated the first substantive conception of a comprehensive system of canals to connect the Great Lakes to the Atlantic by way of the St. Lawrence for ocean-going traffic. Previous commentators obliquely alluded to the abstract possibility, but we can safely claim that Merritt’s comments mark the genesis of the Seaway idea. These

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to hire Nathan Roberts as a consulting engineer. See: Upper Canada, Assembly, *Third Report of the Select Committee Appointed to Examine and Enquire into the Management of the Welland Canal... Office of the Constitution* (Toronto: William Lyon Mackenzie, 1836), Appendix II, No.27, 253.

<sup>42</sup> Upper Canada, Assembly, *Third Report of the Select Committee Appointed to Examine and Enquire into the Management of the Welland Canal... Office of the Constitution* (Toronto: William Lyon Mackenzie, 1836). Also see: John J. Jackson, *The Welland Canals and Their Communities: Engineering, Industrial, and Urban Transformation* (Toronto: University of Toronto Press, 1997), 43.

<sup>43</sup> Merritt arrived home from his excursion to the United States on October 18, 1824 and the ceremony to start Welland construction was held on November 30, 1824. At this ceremony, he offered these claims. J.P. Merritt, *Biography of the Hon. W.H. Merritt*, 63.

<sup>44</sup> *Ibid.*, 66.

remarks also reinforce the nation-building aspect of the project. Hoping to replicate the Erie's anticipated effects and using it as a foil, Merritt sought to mitigate the audacity of this dream. He emphasized the natural advantages that the St. Lawrence route possessed, claimed it would be cheaper, quicker, and superior to its American counterpart. This assessment quickly proved either naïve or disingenuous with respect to the time, cost, political inertia, as well as the technological and environmental challenges faced during the construction of the Welland Canal.

With construction underway, more than apathy and indifference beset work on the Welland. The Company's capital quickly proved inadequate, and it had to apply to the Assembly for a second increase in their capital ceiling (to £200,000) and secure a public loan for £25,000. Within three months, labor and contracting disputes abounded, hastily constructed dams began to sink, and the hydrologic environment seemed to resist their efforts to transform it. The project was unlike any previously attempted in North America. The Canal had to surmount a difference of over 300 feet within a few miles, while tackling issues of water supply, and constructing a channel and locks that maintained a minimum depth of eight feet. Technological deficiencies, financial austerity, and managerial inexperience exacerbated these challenges. However, the environment itself presented the most persistent obstacle.

Work began in severe weather, frequently encountering heavy precipitation that caused work stoppages and substantial delays. The rain made the clay more adhesive, which significantly slowed the excavation process. In November 1828, one of the banks of the "deep cut" through the escarpment collapsed. The steep angle of the cut and the deposition of excavated earth too close to the bank's edge contributed to the collapse, but

the principal reason was geological. The excavators unexpectedly encountered a bed of loose sand that incoming water carried away as silt, which undermined the structural integrity of the cut's banks. Excavated by hand and oxen, the project expended an unquantifiable sum of organic energy to reshape a habitually uncooperative environment to human ends. Unlike the Erie, the voices of Welland workers remain essentially muted, and the Canal continues to mask the labor of those who dug it. However, historian Ruth Bleasdale has elucidated some of the conditions and challenges faced by the principally south-Irish workforce along Canadian canals in the 1840s. These included religious and cultural conflict, state and private suppression of work stoppages, and a very real and persistent threat of starvation.<sup>45</sup> We can surmise that many of these conditions similarly existed during the first phase of Welland construction. Environmental conditions also posed other challenges. The cold climate forced work stoppages during the winter months, resulting in massive lay-offs and increased hardship for workers. Warm summers carried the threat of disease, especially malaria or "swamp fever."<sup>46</sup> In 1829, serious outbreaks of illness among canal workers caused long delays. Once again, the artifacts of their labor now conceal the human cost incurred during construction.

Setbacks and unforeseen challenges necessitated adaptive and creative solutions, as well as transnational expertise. For example, an American, Oliver Phelps, won a £125 prize by designing a simple pulley system to remove hand-loaded carts from the "deep cut," addressing a technological bottleneck.<sup>47</sup> When the bank of the "deep cut" collapsed

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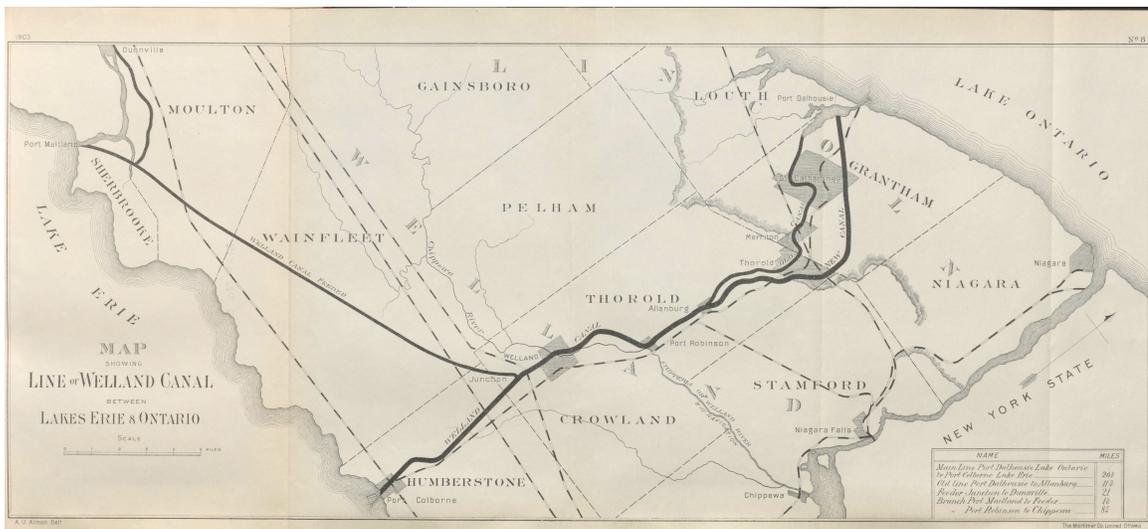
<sup>45</sup> Ruth Bleasdale, "Class Conflict and the Canals of Upper Canada in the 1840s," *Labour/LeTravailleur*, Vol.7 (Spring, 1981), 9-39.

<sup>46</sup> Bleasdale, "Class Conflict and the Canals of Upper Canada in the 1840s," 12; and Ronald Stagg, *The Golden Dream: A History of the St. Lawrence Seaway* (Toronto: Dundurn, 2010), 48.

<sup>47</sup> Apparently, Phelps' rudimentary excavator was the first piece of machinery deployed in the project. Aitken, *The Welland Canal Company*, 61, 157.

the company enlisted James Geddes, one of the Erie's chief engineers, to find a serviceable solution.

In 1827, Colonel By, who oversaw the construction of the Rideau Canal, dispatched an engineer to inspect work on the Welland – his report was not favorable. By's engineer singled out the use of wooden locks, in contrast with the Rideau's elaborate masonry works, and the project's hurried, inexpensive building practices as particularly egregious.<sup>48</sup> This may have been a product of a British-trained engineer's prejudice toward what he perceived as American-style construction methods; but in operation, the wooden locks quickly rotted and had to be replaced, substantiating his criticism.



The Welland Canal (c.1901)<sup>49</sup>

Despite moments of adversity, the Welland Canal opened on November 27, 1829, when two schooners, one American and one Canadian, entered the Canal at Port

<sup>48</sup> The substance of this report can be found in: John MacTaggart, *Three Years in Canada, An Account of the Actual State of the Country in 1826-28* (London: H. Colburn, 1829). Once again, for a discussion of regional technological styles, see Thomas Hughes' *Networks of Power* (1983). For an illustration of competing engineering styles and the consolidation of professional civil engineering in England, see: Dale H. Porter, *The Thames Embankment: Environment, Technology, and Society in Victorian London* (Akron, OH: University of Akron Press, 1998).

<sup>49</sup> Canada, Department of Railways and Canals, *Annual Report, 1901* (Ottawa: S.E. Dawson, 1902), n.p.

Dalhousie on Lake Ontario, passed through the channel on Twelve Mile Creek, and climbed a series of locks up the Niagara escarpment. Thirty-four locks later they sailed the Welland River to the Niagara River, exited above the falls, and, on their fifth day of travel, arrived in Buffalo.<sup>50</sup> The celebrations upon their arrival may have been premature – the Canal needed immediate and frequent repairs, its course in 1833 changed to avoid the Niagara’s current, and its locks required a complete overhaul within the first decade of operation. Moreover, severe weather postponed the maiden voyage and consistently impeded its headway; the first lock’s gate seized and the ships ran aground on a bar, which hampered their passage; the Seaway’s perennial obstruction – ice – also choked their path and the schooners’ crews had to cut passage through several inches of it.<sup>51</sup>

Essentially, the Company and crews had forced the ships under inclement conditions through a canal not yet ready for traffic. However, the event had symbolic importance. The Welland Canal Company had opened the first segment of a Great Lakes-St. Lawrence navigation route, and Merritt had planted the seed of a more extravagant vision, but it took more than a half-century to germinate into a coherent, bi-national political idea.

Given the nationalistic undertones of the project, the inclusion of an American schooner in the maiden voyage on the Welland seems curious. It may have been a nod to the American expertise and capital furnished for the project, and a tacit recognition of the project’s transnational dimensions. Or it may have signified that Welland Canal Company hoped to attract American freight. The *Buffalo Republican* hoped that the schooners’ arrival and opening of the Welland would motivate their “national or state

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<sup>50</sup> Carleton Mabee, *The Seaway Story* (New York: Macmillan, 1961), 19-20.

<sup>51</sup> Letter from Merritt to his wife describing the trip. See: J.P. Merritt, *Biography of the Hon. W.H. Merritt*, 123.

governments... in making a canal or railway from the Niagara river at Schlosser to the same river at Lewiston.” The *Republican* also made a more audacious claim: “Truly, the bold features of the enterprizes [sic] of the New World throw those of the Old far in the shade.”<sup>52</sup> This situates the Welland within a North American technological style, distinct from its European counterpart. In North America, they argued, planners approached the transformation of nature with an audacity heretofore unparalleled. This is also indicative of a discourse and practices shared by overlapping envirotechnical regimes. The derisive remarks of Colonel By’s engineer, who lambasted the “American style” construction practices on the Welland, tacitly corroborates this notion. Discursively and physically, the Welland marked a turning point in the manner by which Canadians approached the Great Lakes-St. Lawrence system. The concept of perfectible nature resounds throughout the statements of Merritt and his contemporaries, such as his claim that the St. Lawrence “was not placed there by the Great Maker for mere ornament, but would eventually, become tributary to the powers of clever men.”<sup>53</sup> The Welland planners believed they were such clever men; and their statements demonstrate the ease with which they reconciled the spiritual and practical.

By constructing this system, they also effected profound material changes. In the first year alone, workers excavated 1,330,704 cubic yards of earth, and irreversibly altered local hydrology through intra-basin diversion.<sup>54</sup> The project’s movement of people and commodities simultaneously reorganized the region’s social and economic patterns, by reconfiguring space and privileging certain activities and priorities over others. After 1830, the highly successful Niagara portage and cargo forwarding

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<sup>52</sup> Ibid., 124.

<sup>53</sup> This remark comes from J.P. Merritt paraphrasing his father’s perspective, see: Ibid., 75.

<sup>54</sup> Figure quoted in: Aitken, *The Welland Canal Company*, 60 (From the Annual Report of 1826).

enterprises struggled to compete with the Canal. The new canal provoked the disappearance of another system, and with it, the established patterns of commerce. Again, locals confronted a compression of time and space that reshaped their communities.

More than a series of interdependent technological artifacts, the Welland was an envirotechnical system. The Welland Canal Company formed a subsidiary – the Erie and Ontario Transportation Company – that built storehouses, and operated a regular steamboat service for passengers and freight. To facilitate traffic, the Company established low tolls to compete with the Erie Canal, deployed workers to perform regular maintenance and facility upgrades, and they established mercantile houses to extend commercial credit to shippers. Entangled with an assortment of related artifacts, institutions, enterprises, networks, expertise, people, and discourses, the Canal engendered a new envirotechnical system, sustained by a regime that disseminated a discourse about nature's perfectibility and structured an economic system based on mercantile capitalism. In a sense, the Welland pushed the boundaries between the metropolis and periphery. It made the Canal Company an intermediary power with control over the flow of commodities at one juncture. Instead of receiving credit from commercial-elites in Montreal, they extended it locally. The story of the Welland Canal is about shifting economic and political power, as well as technological intervention in a specific environmental domain.

I claim the Welland as a novel system because it significantly departed from its immediate predecessors, the Erie and Lachine canals. Unlike these canals, which used horses or mules to tow boats through their locks, the Welland was constructed as a

“shipway” allowing ships to steam through its channels and locks. The conspicuous nexus between the organic and technological found at the Eire and Soulanges’ towpaths became more obscure on the Welland. The Welland presented an illusion of autonomy, when, in fact, it remained as contingent on environmental forces as its precursors. The maiden voyage described above is demonstrative of this – climate governed their departure and ice beset the ships in the locks. Merritt initially sought to rationalize Twelve Mile Creek’s stream-flow across seasons by diverting water from nearby streams; however, the Canal’s operation remained contingent on seasonal variability. The planners of the Welland inaugurated unprecedented transformations to local hydrology and imbued the environment with new cultural meanings, but they did not overcome it. It remained at once a profoundly constructed and mediated space as well as an actor beyond their control.

### *Canadian Expansion and Aggregation*

In the years that followed the opening of the Welland, the expansion of navigation channels continued in other areas along the Great Lakes-St. Lawrence. On the Canadian side, Merritt relentlessly promoted his vision of a comprehensively planned navigation route from the Great Lakes to the Atlantic. He became a member of the Assembly of Upper Canada, where he claimed that Upper and Lower Canada needed “uninterrupted access to the ocean,” and pled for canals “of suitable dimensions, thus making in effect, a *seacoast of our inland lake shores.*”<sup>55</sup> To this end, in 1832, Merritt encouraged the Assembly to appoint a canal commission, on which he served as the chairman. The

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<sup>55</sup> Merritt laid his case out for the idea of a “seacoast” in a Report of the Select Committee on the Civil Government of Canada, reproduced in: Aitken, *The Welland Canal Company*, 97-107. The quotes above are taken from: W.H. Merritt, “Circular, Feb. 15, 1831,” LAC, *William Hamilton Merritt Papers*, MG24-E1, Reel C-7064 (emphasis mine).

Commission, in consultation with Benjamin Wright, chief engineer of the Erie Canal, planned the construction of nine foot St. Lawrence canals and a commensurate expansion of the Welland.<sup>56</sup>

The participation of Wright reveals the continued deployment of transnational expertise, and the establishment of a provincial canal commission created a new state apparatus to develop and manage water resources for the purposes of navigation. Moreover, the Welland Canal Company's persistent financial difficulties spurred the province to assume ownership of the Welland and its associated works in 1837.<sup>57</sup> The model of public ownership applied to the Erie and Lachine canals became the *status quo* in Upper Canada, as well as part and parcel of an evolving envirotechnical regime in the province.

Larger forces that compelled navigable expansion in Upper Canada's waters compounded Merritt's seemingly endless supply of enthusiasm and ambition. The perception that Upper Canada lacked adequate transportation arteries to service a rapidly growing population, and continued competition from the superior Erie and Oswego canals nurtured the dream of a comprehensively planned waterway to the Atlantic. However, Lower Canada continued to frustrate their designs, and its Assembly refused to expend funds on canal expansion at the Lachine and Soulanges rapids. Undeterred by the absence of French Canadian cooperation, in 1834, Upper Canada's Assembly authorized a public loan of £350,000 for canal construction, and work began on the Long Sault

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<sup>56</sup> Reference to Merritt's role as commission and the expansion of their ambitions to include the St. Lawrence is discussed on: J.P. Merritt, *Biography of the Hon. W.H. Merritt*, 138. Reference to the participation of Benjamin Wright can be found in: Mabee, *The Seaway Story*, 22.

<sup>57</sup> The story of the Welland Canal Company's financial troubles and the provincial purchase of the Company are too elaborate to recount here. For an excellent description see the "Finance" chapter (Ch.4 – pages 76 to 109) of Aitken's account. For the specifics on the Province's purchase see: Aitken, *The Welland Canal Company*, 105-109.

canals above Cornwall. In 1837, it authorized an additional £245,000 to renovate the Welland.<sup>58</sup> Economic Depression and political rebellions, in 1837, conspired to suspend work on the Long Sault canals, significantly delaying the project's completion. Furthermore, like the conditions experienced during the Welland's initial construction, numerous setbacks beset construction along the St. Lawrence. Political qualities rather than technical suitability often informed route selection, correctives to technical errors increased the scale of work, pervasive labor and inter-cultural conflicts impeded construction, and the environment seemed to resist their interventions – the current frustrated efforts to impede its flow and rocks obstructed excavation.<sup>59</sup>

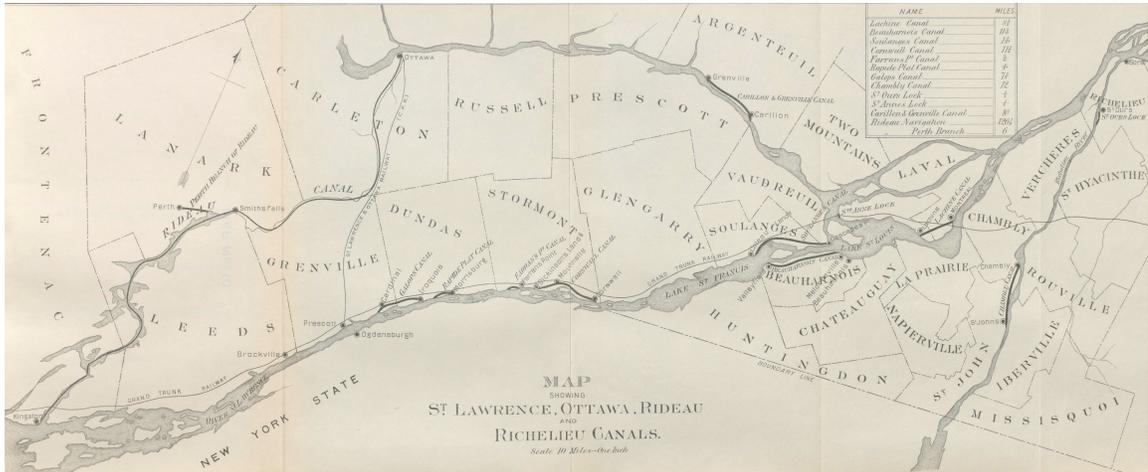
Despite these setbacks, construction continued. The political unification of Upper and Lower Canada, in 1841, removed the obstacle of Lower Canadian intransigence, and an imperial loan of £1,500,000 allowed Merritt to expand the St. Lawrence project to cover the Soulanges section and the Lachine Canal. By 1848, a continuous system of canals, locks, and channels, with a minimum depth of nine feet, connected Lake Erie and Lake Ontario with the Atlantic.<sup>60</sup>

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<sup>58</sup> See: William R. Willoughby, *The St. Lawrence Waterway: A Study in Politics and Diplomacy* (Madison, WI: University of Wisconsin Press, 1961), 22-23. These loans were converted into stock once the Province purchased the Welland Canal Company.

<sup>59</sup> For an example of the political considerations inherent in the selection of canal routes, the story of Seigneur Ellice is illustrative. A member of the Imperial Parliament, he used his political influence to locate the Beauharnois Canal on the opposite side of the river than originally proposed, so that it would pass through his seignury. See: Mabee, *The Seaway Story*, 22-23. For examples of intercultural and labor conflict, see: Bleasdale, "Class Conflict and the Canals of Upper Canada in the 1840s," 20.

<sup>60</sup> For a historical sketch of the nine-foot project, see: Canada, Canal Commission, *Letter to the Honourable Secretary of State (J.C. Aikins)...*, February 24, 1871 (Ottawa: Her Majesty's Printer, 1871), 9-19.



St. Lawrence Canals (c.1901)<sup>61</sup>

In a sense, this marks the completion of the earliest incarnation of what would eventually be termed the “Seaway.” However, applying this label would not only be anachronistic, but slightly disingenuous. The nine-foot project did not keep pace with marine technology, and faced obsolescence before completed. Goods still had to be transshipped at Montreal onto larger vessels for ocean travel. Moreover, deepening the channel between Montreal and Quebec, from 11 to 16 feet, and widening it from 75 to 150 feet, remained unfinished until 1854; whereupon the Montréal Harbor Commission immediately proposed that it be deepened four feet further to accommodate deeper drafts.<sup>62</sup> Finally, these improvements extended only to Lake Erie. Connecting the upper Great Lakes to the Atlantic awaited further developments, later undertaken by Americans. Ocean-going ships waited another century until the St. Lawrence and connecting-channels between the Lakes maintained sufficient depth to accommodate many of them.

Compared to the Erie, Merritt’s Welland and St. Lawrence canals possessed advantages in speed, distance, capacity, and cost; however, his ambition to recapture the

<sup>61</sup> Canada, Department of Railways and Canals, *Annual Report, 1901*, n.p.

<sup>62</sup> Thos. C. Keefer, Montreal Harbor Commission, *Report on Dredging in Lake St. Peter and on the Improvement of the River St. Lawrence* (Montreal: John Lovell, 1855).

trade of the west remained unrealized, and the Erie continued to carry the vast majority of Midwestern commerce.<sup>63</sup> Some commentators attributed the continued success of the Erie to climatic factors – the warmer weather allowed the Erie to remain open an extra month, and, unlike Montreal, New York’s harbor did not freeze over during winter.<sup>64</sup> Merritt believed that the Canadian canals’ apparent competitive disadvantage did not result from inadequate facilities or an unfavorable climate, but a pervasive feeling of apathy, which led to mismanagement and underutilization. As a legislator, Canal Commissioner, and eventually Chief Commissioner of Public Works for the Canadas, Merritt zealously advocated for more effective navigation facilities and public commitment to their improvement. In 1862, while visiting Montreal, Merritt became ill and doctors advised him to return home. The steamship *Champion* carried him homeward, and while bypassing the Long Sault Rapids in the St. Lawrence canals, he died. This was a fitting death for a man who dreamed of creating an “inland seacoast” of the Great Lakes’ shores, and worked tirelessly to see that dream actualized.<sup>65</sup>

### American Improvements

Had Charles Dickens traversed the lower Great Lakes and St. Lawrence six years later, his experience would likely have been quite different. With the completion of the continuous, Canadian nine-foot channel from Lake Erie to Montreal, Dickens would have

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<sup>63</sup> The Welland-St. Lawrence route, from the foot of Lake Erie to Montréal, took about three days, whereas the Erie took about twelve; the St. Lawrence and Welland canals were about 69 miles combined, the Erie 366 miles; the tolls were also substantially lower on the Canadian canals; and these canals were designed for ships with larger cargoes than the barges on the Erie. Despite all these advantages, historian Carleton Mabee claimed that the Erie continued to control ninety-percent of all the trade of the American Midwest. See: Mabee, *The Seaway Story*, 24-25.

<sup>64</sup> A British commentator, Alexander MacKay, made this point in: Alexander MacKay, *The Western World*, Vol.III (London: Richard Bentley, 1849), 148-160.

<sup>65</sup> An account of Merritt’s death can be found in: J.P. Merritt, *Biography of the Hon. W.H. Merritt*, 429.

avoided the “somewhat tedious” series of portages between Kingston and Montreal.<sup>66</sup> However, something experiential would have also been lost. No rapids would have been shot near the Thousand Islands, and the countryside he found pleasant would have been bypassed. This tension between development and loss continued to play out as the Seaway passed from conception to reality.

Americans undertook navigation improvements along the Great Lakes-St. Lawrence at a more protracted pace. Over the 19<sup>th</sup> century, many surveys and reports acknowledged the imperative to improve Great Lakes’ harbors and connecting channels, but these inspired little action during the first half of the century.<sup>67</sup> As with the Erie, the federal government proved reluctant to appropriate federal funds for local improvements, largely because of fiscal conservatism and constitutional ambiguity. Although the federal government’s authority to regulate interstate commerce, including riverine navigation, had been affirmed by a supreme court decision in 1824, only with Millard Fillmore’s presidency (1850-53) – a Whig who saw little difference between “objects of this kind on the ocean and the power to make appropriations for similar objects on lakes and rivers” – did the issue of Great Lakes improvements gain federal traction.<sup>68</sup> Fillmore’s less circumscribed view of federal authority to appropriate funds for internal navigation improvements prompted the introduction of several bills, mostly from Midwestern congressional representatives, calling for improvements to Great Lakes navigation.<sup>69</sup>

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<sup>66</sup> Dickens’ words. Dickens, *American Notes*, 190.

<sup>67</sup> Willoughby, *The St. Lawrence Waterway*, 30-31.

<sup>68</sup> Millard Fillmore, “First Annual Message, December 2, 1850,” *Messages and Papers of the Presidents*, Vol. V, James D. Richardson, ed. (Washington, DC: GPO, 1897), 2626.

<sup>69</sup> United States, Congress, House of Representatives, *Laws of the United States Relating to Improvements of Rivers and Harbors, 1790-1913*, House Document 1491, 62 Congress, 3 Session, Vol.1 (August 12, 1913), 116-126.

The most important outcome of this legislative flurry was the federal appropriation of 750,000 acres of public land to aid Michigan in the construction of a canal around St. Marys Falls, which separated Lake Superior from Lake Huron. Michigan began constructing the canal in 1853 and completed it in two years; it maintained a minimum depth of eleven and a half feet (in its two locks), and cost approximately a million dollars.<sup>70</sup> Having accomplished the first manifestation of the “Soo Locks,” congressmen from the Great Lakes region attempted to secure further appropriations for deepening the St. Marys and St. Clair rivers. In 1854, President Pierce pocket-vetoed a bill appropriating \$45,000 for dredging in the St. Clair and \$40,000 for the St. Marys. Exasperated with renewed executive obstinacy, an association of Great Lakes municipalities sanctioned and funded private efforts to deepen the St. Clair, but their efforts quickly proved untenable without federal assistance.<sup>71</sup> An 1855 report by Lieutenant Colonel Graham of the Topographical Engineers, regarding the St. Clair, argued that the shallow water posed a serious barrier to the growth of Midwestern trade, and its deepening should be regarded as “a necessary element in the military defense of the National Frontier.”<sup>72</sup> This report provided Midwestern representatives with the discursive ammunition needed to reintroduce bills calling for improvements to the St. Marys and St. Clair rivers. Although they passed with a resounding majority, Pierce once

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<sup>70</sup> “The History of the Soo Locks,” *United States Army Corps of Engineers, Detroit District Website*, accessed April 14, 2014, <http://www.lre.usace.army.mil/Missions/Recreation/SooLocksVisitorCenter/SooLocksHistory.aspx>; also see: Stagg, *The Golden Dream*, 67.

<sup>71</sup> United States, Congress. House of Representatives, *Laws of the United States Relating to Improvements of Rivers and Harbors*, House Document 1491, 62 Congress, 3 Session, Vol.2 (August 12, 1913), 116-126.

<sup>72</sup> See: United States, Congress, Senate, *Report of the Secretary of War... A Copy of a Report of Lieutenant Colonel of the Harbors, etc. in Wisconsin, Illinois, Indiana, and Michigan, Under his Superintendence*. Senate Document 16, 34 Congress, 3 Session (December 27, 1856), 127-140.

again vetoed them on the grounds that they exceeded Congress' constitutional authority. However, in July 1856, Congress overrode the Presidential veto and enacted them.<sup>73</sup>

The following year, Congress fully funded the dredging of the St. Clair and St. Marys rivers; and, by the end of the decade, the St. Clair maintained a minimum depth of 12 feet, and the St. Marys a depth of 14 feet. These improvements kept pace with the needs of existing traffic, but Midwestern congressmen continued to appeal for further appropriations. The election of Abraham Lincoln and onset of the Civil War prevented undertakings that did not immediately assist the war effort; but American channels now linked the headwaters of Lake Superior with Lake Erie, and Canadians had constructed a nine-foot waterway from Erie to the Atlantic. Not comprehensively planned, inconsistently constructed, and built under the auspices of national competition and defense exigencies, the first manifestation of a Great Lakes-St. Lawrence waterway reaching from Superior to the Atlantic was in place by 1859.

This waterway was actually a series of waterways, comprised of multiple and overlapping envirotechnical systems. The plurality of these systems was an important feature of this waterway; their dissociated construction, disparate specifications, and independent operation reflected a lack of coherence necessary to characterize them as a singular entity. Moreover, these systems often competed with one another, and, on occasion, competition produced redundancies. For example, Canadians replicated the American "Soo" locks on their side of the boundary in the 1890s, but with the competitive advantage of an electrically operated lock.<sup>74</sup> Furthermore, at Niagara, the

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<sup>73</sup> Willoughby, *The St. Lawrence Waterway*, 34-35.

<sup>74</sup> For the International Deep Waterways Association's discussion of this electrically operated lock, see: International Deep Waterways Association, *Proceedings of the First Annual Convention of the*

*Buffalo Observer* was one of many voices advocating the construction of an American canal to duplicate the Welland. Several decades later, reconfigured elements of these systems coalesced into unified system and bi-national management regime, under the auspices of the Seaway project and associated institutions.

Near the turn of the century, another aspect of the boundary waters would have been unrecognizable to Dickens – the emergence of a progressive vision of these waters’ transformative potential to foster cooperation between the nations whose boundaries it demarcated. By the 1890s, the antipathy that traversed the boundary waters during the construction of the Welland and Erie Canals had sufficiently dissipated, and waterway advocates in both Canada and the United States advanced the possibility of cooperative development of boundary water resources. These advocates transformed Seaway discourse from the “extravagant theorizing” of William Hamilton Merritt to a concrete, bi-national political idea that emphasized cooperation. However, circumstances in the intervening years exacerbated the tension between Canada and the United States, and another transportation modality – the railroad – supplanted the supremacy of canals.

#### *Canal Mania and Rapprochement*

In 1877, another round of construction began to enlarge the Canadian portion of the Great Lakes-St. Lawrence canal system to a unified depth of 14 feet.<sup>75</sup> Work proceeded at an exceedingly slow pace, enthusiasm generally waned, and an alternative mode of transportation – the railroad – garnered an increasingly disproportionate share of national attention and financial support. By 1887, the Canadian federal government

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*International Deep Waterways Association, Cleveland, September 24, 25, 25, 1895* (Toronto: Hart & Riddell, 1896), 164, 229.

<sup>75</sup> Canada, Parliament, House of Commons, *Report of the Chief Engineer of Public Works on the Progress of Canal Enlargement between Lake Erie and Montreal*, Sessional Paper 6, Vol.10, 1877 (Ottawa: Her Majesty’s Printer, 1878), 4.

funded another round of route alterations and deepened the Welland; however, without commensurate improvements to the St. Lawrence canals, only limited benefit accrued from these efforts. The inconvenience of transshipment along the St. Lawrence, the removal of tolls from the Erie and Oswego canals (in 1883) increased their share of the Lakes' traffic, and, most importantly, competition from the railroads significantly siphoned traffic, enthusiasm, and funding from inland water navigation.

By the 1850s, railroads effectively supplanted the era of canal building. Buttressed by the completion of the first transcontinental railroad – an amalgam of the Western, Central and Union Pacific railroads – in 1869, and its Canadian counterpart, the Canadian Pacific, in 1885, railroads prevailed as the predominant mode of long-distance transportation. Like the Erie Canal, railroads wrought momentous technological, economic, and spatial transformations. The scale of their cargoes and their speed could not be matched by contemporary waterway transportation.<sup>76</sup> In short, they facilitated an unprecedented compression of time and space, evidenced by the construction of time zones, a byproduct of their rapidity.

Like the portage roads that once circumvented Niagara, canals appeared to belong to a bygone era and verged on obsolescence. Waterway advocates claimed that the enlargement of existing canal infrastructure would alleviate this disparity, but, despite their remonstrations, the latter half of the 19<sup>th</sup> century belonged to railroads, and national infrastructure policies reflected this infrastructural reality. It should also be pointed out that railroads effectively avoided the seasonal variability of inland water navigation.

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<sup>76</sup> Canada, Parliament, House of Commons, *Debates*, 8 Parliament, 2 Session, Vol.44, No.1 (April 30, 1897),1650-52. This citation includes an example of Sir Charles Tupper acknowledging the superiority of railroads; also see: Canada, Parliament, House of Commons, *Debates*, 4 Parliament, 4 Session, Vol.12, No.1 (April 25, 1882), 1145.

While ice locked up many of the canals and channels along the Great Lakes-St. Lawrence for nearly half the year, railroads could operate almost always year-round.

During the 1870s and 1880s, the Canadian government approached continued waterway development as a means to alleviate unemployment. In fact, in 1879, the outgoing Prime Minister, William Mackenzie, frankly admitted that canal construction continued “for the purpose of furnishing employment to masses of our people.”<sup>77</sup> This mentality offered little pressure to quickly or efficiently complete the undertakings, and only in 1904, 26-years after the project’s commencement, did the entire Canadian system, from Lake Erie to the Atlantic, maintain a depth of at least 14 feet.<sup>78</sup>

Despite this inauspicious atmosphere, the 1890s witnessed a revival of what the *Nation* called “canal mania.”<sup>79</sup> We can speculate about the myriad circumstances that precipitated this revival of enthusiasm for inland waterway transportation. The *Nation* attributed it to the commercial success of the Suez Canal and projected benefits of the Panama Canal, then under French construction. However, the domestic context also played a significant contributory role. Economic depression, deflation of grain prices, and dissatisfaction with railroad tariffs, especially in the Midwest, emphasized the need for alternative transportation options and expanded markets. The continued growth of the Midwest in political and economic importance also reinforced a call for the expansion of inland waterways.<sup>80</sup> As traditional industry moved westward, new industries based on

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<sup>77</sup> Canada, Parliament, House of Commons, *Debates*, 4 Parliament, 1 Session, Vol.7, No.2 (April 30, 1879), 1656.

<sup>78</sup> Willoughby, *The St. Lawrence Waterway*, 52.

<sup>79</sup> “The Canal Mania,” *Nation*, September 12, 1895, 180.

<sup>80</sup> For example, in 1890 American wheat production resulted in 449,042,000 bushels, by 1910 this figure stood at 625,476,000 bushels. Moreover, the population of the north-central states stood at 22,410,417 in 1890, by 1910 it had increased to 29,888,542. Both these statistics can be found in: *Historical Statistics of the United States, 1789-1945* (Washington, DC: GPO, 1949), 27, 106. Similarly, growth of Canadian grain production on the prairies kept pace with its American counterpart – Canadian production in 1890 stood at

regional resource production sprang up, and the American Midwest, along with its Canadian counterpart, became the continental breadbasket, as well as an important industrial and commercial center. Not coincidentally, calls for cooperative development of the Great Lakes-St. Lawrence resounded most fervently from the Midwest. This growing sentiment is reflected in Representative J. Logan Chipman of Michigan's remarks in 1890, he said: that every Midwestern child should be taught as "the creed of his civil faith" that they "must have access to the sea in their own ships."<sup>81</sup> Taken together, these circumstances conspired to put the expansion of inland waterways on the political agendas of both Canada and the United States.

The increasingly apparent obsolescence of the Erie Canal further contributed to this renewed sense of "canal mania." Despite the abolition of tolls to incentivize traffic, the Canal's capacity was simply too low to remain competitive, and transshipment onto rails at Buffalo or Chicago, and again at the seaboard for foreign trade, supplanted the Erie.<sup>82</sup> Midwestern commercial interests continued to believe that waterborne freight could reach foreign destinations with great speed and economy, contingent on improvements to Great Lakes-St. Lawrence navigation. Moreover, these interests genuinely feared that persistent and unilateral Canadian improvement of this transportation system could mean foreign capture of an increasing amount of its total trade. Consequently, Americans expanded their efforts toward navigation improvements under the auspices of the 1890 Rivers and Harbors Act, which appropriated \$1.5 million for the improvement of the

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42,000,000 bushels, by 1903 that figure had increased to 67,000,000 bushels; see: Canada, Census and Statistics Bureau, *Canada Year Book, 1905* (Ottawa: S.E. Dawson, His Majesty's Printer, 1906), 78.

<sup>81</sup> Deep Waterways Convention, *Lake Transportation, The Proceedings of the Deep Waterways Convention, Held at Detroit Mich., Dec. 17 and 18, 1891* (Detroit: The Convention, 1892), 5.

<sup>82</sup> For the abolishment of tolls and signs of the Erie's demise, see: Sheriff, *The Artificial River*, 173. Here, she argued – "If the Erie compressed distance and time, the railroads annihilated them..."

rivers, harbors, and connecting channels of the Great Lakes, and specifically called for a survey looking toward a “ship-channel twenty feet in depth and of a suitable width in the shallows of the connecting waters of the lakes between Chicago, Duluth, and Buffalo.”<sup>83</sup> With an additional congressional appropriation of \$375,000, in 1892, and the provision that further appropriations could be made “from time to time,” but not to exceed an aggregate of \$2,965,000, they completed this substantial enlargement in 1897.<sup>84</sup> These improvements meant that large ships, upwards of 5000 tons, could traverse the upper Great Lakes from Duluth to Buffalo without breaking cargo; but the obsolescence of the Erie and incommensurate dimensions of the Canadian canals meant that their cargo still had to be transshipped onto rails to reach the seaboard.

Given these circumstances, and fueled by Midwestern commercial interests, members of Congress began to advance the idea of cooperative, bi-national development of the St. Lawrence route. In early 1892, John Lind (R-MN) introduced a resolution into the House Committee on Interstate and Foreign Commerce that called for a joint U.S.-Canadian Study of the “improvement of the waterway from the head of Lake Superior by way of the Welland and St. Lawrence Canals and the St. Lawrence River to the sea.”<sup>85</sup>

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<sup>83</sup> United States, Congress, House of Representatives, *Laws Relating to Improvements of Rivers and Harbors, 1790-1913*, House Document 1491, 62 Congress, 3 Session, Vol.2 (August 12, 1913), 591. There is a sizable historiography on the 1890 Rivers and Harbors Act, because it required dam sites and plans for dams on navigable rivers be approved by the Army Corps of Engineers. This is largely the result of increased interest in, and attempts to secure sites for hydroelectric production by private concerns. Moreover, it contained a provision that prohibited dumping that would obstruct navigation, an important moment in the history of water pollution (superseded by the “Refuse Act” or Rivers and Harbors Act of 1899). For an brief overview see the following excellent works by Martin Melosi: Martin V. Melosi, *Precious Commodity: Providing Water for America’s Cities* (Pittsburg, PA: University of Pittsburg Press, 2011) 34-35; and Martin V. Melosi, *Effluent America: Cities, Industries, Energy, and the Environment* (Pittsburg, PA: University of Pittsburg Press, 2001), 66, 115.

<sup>84</sup> The quote and amount appropriated can be found in: United States, Congress, House of Representatives, *Laws Relating to Improvements of Rivers and Harbors, 1790-1913*, House Document 1491, 62 Congress, 3 Session, Vol.2 (August 12, 1913), 639.

<sup>85</sup> United States, Congress, House of Representatives, *Congressional Record*, 52 Congress, 1 Session (January 5, 1892), 132, 939.

He further suggested that these canals should be deepened to at least 20 feet to correspond with the new “Soo Canal,” so that “Duluth, Milwaukee, Chicago, Cleveland, and Buffalo would enjoy all the advantages of seaboard cities with reference to foreign trade.”<sup>86</sup> It is unclear what participatory role the United States would have, but he called for negotiations with the Canadian government to secure the use of these canals in perpetuity. Although recommended out of committee, Lind’s bill never advanced to a vote before the whole House of Representatives.

Almost concurrently, Col. Frederick C. Denison (MP-West Toronto), introduced a motion into the Canadian House of Commons calling for the same Canadian canals to be deepened to 20 feet, like the new “Soo Canal.”<sup>87</sup> Similar to Lind’s motion, it did not delineate a specific mechanism for American cooperation, but it reveals the increasing consonance of waterway advocates’ designs for the St. Lawrence’s future.

Although neither legislative initiative gained actionable traction in their respective assemblies, they mark the inauguration of a 62-year, bi-national political debate over the cooperative development of Great Lakes-St. Lawrence navigation, represent a major transformation in the terms of Seaway discourse, and instigated a transnational advocacy movement.

This chapter has chronicled some of the earliest attempts to “improve” this hydrologic system for specific human ends. These early improvements circumscribed the choices available to future planners, and forged a series of overlapping envirotechnical

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<sup>86</sup> United States, Congress, House of Representatives, John Lind, *Waterway from the Head of Lake Superior to the Sea, Report from the Committee on Interstate and Foreign Commerce*, House Report 185, 52 Congress, 1 Session (February 8, 1892), 2.

<sup>87</sup> Canada, Parliament, House of Commons, *Debates*, 7 Parliament, 2 Session, Vol.34, No.1 (March 14, 1892), 138-151. The text of his resolution is on page 138. Also see Denison’s remarks at the International Deep Waterways Convention in Toronto, in 1894: International Deep Waterways Association, *Proceedings of the First Annual Convention*, 395.

systems. The systems often competed for freight and dominant commercial positioning, but shared a discourse that invoked nature's perfectibility through technological intervention as well as a common effort to compress time and space in the movement of commodities to market. Independently and inconsistently constructed, they represent an uncoordinated, piecemeal approach to Great Lakes-St. Lawrence navigation, but also reveal the interdependency between environmental context and technological artifacts. As the systems evolved, so did the energy regimes that mobilized them. The earliest waterways relied on animal and human energy to move boats through canal locks; however, beginning with the Welland "Ship Canal," the motive power of steam replaced the animal energy expended along towpaths. By the middle of the 19<sup>th</sup> century, the various systems collectively constituted an informal navigable link between the Great Lakes and Atlantic, but their systematic integration and rationalization took nearly a century of bi-national debate and the recruitment of more powerful economic, political, and ideological forces.

The systems factored prominently into discrete programs aimed at nation building. In the United States, the construction of inland waterways underscored a process of national economic and political integration. Although constructed, owned, and operated at the state level, the Erie Canal exemplified this integration, and its success encouraged emulation across the United States. On the Canadian side, Welland Canal construction began as a proto-national response to the Erie's perceived capture of interior trade. Canadian scholars have argued that the St. Lawrence structured Canadian society, but I posited that the various Canadian canals interspersed along the Great Lakes-St. Lawrence constituted an infrastructural precursor to Canadian national political and economic

integration. The river certainly structured political boundaries and oriented economic patterns, but the envirotechnical transformation of this space helped to construct the nation, materially and metaphorically. The river and the systems constructed along it shaped adjacent societies within and beyond national boundaries.

Although the envirotechnical systems constructed across the national boundary competed for commercial primacy, they shared geographies, ideologies, and style. Accordingly, I focused on the transnational dimensions of seemingly discrete improvements. I explored how the international border, fixed within the boundary waters, conditioned the actions of those seeking to transform it, but also considered the border's permeability. This porousness was exemplified by the expertise, labor, and capital that transgressed the boundary; combined with shared objectives, construction styles, and ideological catalysts they form a transnational phenomenon that links overlapping envirotechnical systems.

When Dickens commented on the narrow space between the Union Jack and Stars and Stripes at the mouth of the Niagara, he observed this shared, yet contested space. The river harbored the ambitions of both Americans and Canadians alike, but not until the following century would they truly approach it cooperatively. By 1892, the national antagonism that seemed to underscore earlier navigation improvements had substantially receded, and been replaced by a tentative shift toward collaboration. The formation of the International Waterways Commission (IWC), in 1902, institutionalized this increasing willingness to cooperatively tackle boundary water issues; the establishment of the International Joint Commission (IJC) in 1909, permanently entrenched this relationship; and both evidence novel mechanisms attributed to conservation diplomacy.

The inaugural, cooperative legislative proposals engendered a bi-national Seaway advocacy movement, with several manifestations over the following half-century. In 1892, William Hamilton Merritt's dream of creating an inland seacoast of the Great Lakes' shores had become a concrete, transnational political idea, but it would take many more decades of negotiation for that dream to become a physical reality.

## Chapter Two

### *A Deep Water Hymn*

The King who gave these sea-lakes vast  
For man's great use, all time to last,  
Carved on the earth-crust His decree  
To ope' their channels to the sea  
And stretch to inland field and mine  
The endless highway of the brine.

Direct from Cleveland we shall sleep,  
Rocked in a channel to the deep;  
And from Superior, too, we'll sweep,  
Rocked in a channel to the deep –  
Rocked in a channel to the deep.

O, blind and puny gropes the man  
Who can not see God's mighty plan  
To bring the western harvest-feast  
By shipways free to hung'ring east.  
And thus His grand design complete  
To tap the realm of bread and meat.

Safe from Chicago we shall sleep,  
Rocked in a channel to the deep;  
Aye, from all lake ports we shall sweep,  
Rocked in a channel to the deep –  
Rocked in a channel to the deep.<sup>1</sup>

In the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, Seaway proselytization proliferated on both sides of the border and devotees advanced the cause with nearly religious fervor. The new “Seaway faithful” convened conventions, established advocacy groups, lobbied governments, and attempted to convert skeptics to the conviction that a deep waterway from the Great Lakes to the Atlantic Ocean was a panacea for continental transportation and economic tribulations. They wrote, spoke, and, as the curious cultural artifact above illustrates, professed their conviction in song. The religious overtones of this discourse are self-evident but worth underscoring. The songwriter claimed that navigable opening

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<sup>1</sup> Frank Abial Flower's “Deep Water Hymn” sung to the tune of “Rocked in a Cradle of the Deep.” International Deep Waterways Association, *Proceedings of the First Annual Convention*, 316.

of the Great Lakes was divinely ordained, the completion of God's "grand design." For advocates, this revelation was axiomatic and only the willfully ignorant were unreceptive.

The conflation of environmental utility and religious imperative under the rubric of nature's perfectibility through human intervention has been established; this chapter is about the institutionalization of a different kind of authority – transnational environmental and technological expertise. The transition from divine ordinance to secular, scientific expertise as the central authority underlying environmental intervention was halting, contingent, and often interdependent, and Seaway advocates simultaneously appealed to both to advance their interests. The hymn at the chapter's outset plays two roles. It is a sort of transitional cultural artifact – a symbolic representation of a wider discourse that claimed nature was perfectible by divine decree and through human action; placed alongside a "modern" capitalistic concern about efficiently moving commodities to eastern markets. While it reveals the passion advocates evinced about the Seaway dream, it also sits uncomfortably in a modernizing context with changing values and epistemic priorities. The institutions described in this chapter are distinctly modern and underscored by discourses that claim scientific expertise and dispassionate judgment.

In the pages that follow, I focus on the institution of a management regime sustained by the construction of bi-national expertise under the auspices of the International Joint Commission (IJC) and its immediate predecessors. I explore the formalization and institutionalization of these transnational exchanges, the establishment of new cross-border networks of environmental knowledge, and their entangled ties to Seaway advocates.

Although the earliest, 19<sup>th</sup> century large-scale interventions into the boundary waters possessed distinctly nationalistic and competitive dimensions, by the century's end, the cross-border discourse advocating the further development of these waters became increasingly conciliatory. The establishment of the IJC, in 1909, evidences a corresponding institutional and diplomatic *rapprochement*. Furnishing equal representation for Canada and the United States, the IJC is a permanent institutional mechanism responsible for administering, adjudicating, investigating, and making recommendations about boundary water issues. Today, it is globally described as a paragon of cooperative resource management and environmental expertise.<sup>2</sup> Instrumental to the IJC's inception, Seaway advocacy organizations benefited considerably from its operation. The boundaries between advocacy and expertise appear blurred, at times indistinguishable. I examine how Seaway discourse and associated institutions helped to engender a novel form of conservation diplomacy. They forged diplomatic mechanisms that renegotiated the dynamics of Canadian-American relations by creating the necessary diplomatic space to confront one another directly, in an era when the British mediated their interaction.

This expertise and associated set of practices proved integral to the construction and sustainment of 20<sup>th</sup> century envirotechnical systems interposed along the boundary waters. The IJC provided institutional space and acted as an intermediary for cross-cultural, reciprocal exchanges of knowledge. Essentially, it became a node in a

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<sup>2</sup> For example, a 2002 World Bank report praised the IJC as a superlative cooperative model. Describing its success, the report specifically pointed to the scientific bases of its conclusions, its political sensitivity, and strict impartiality (claims which are questioned below). See: Maurice Schiff and L. Alan Winters, *Regional Cooperation and the Role of International Organizations and Regional Integration: Policy Research Working Paper 2872* (Washington, DC: World Bank, Development Research Group, July 2002), 7-10.

transnational network of environmental expertise, formalizing the production and dissemination of transboundary environmental knowledge. Here, I investigate the earliest legislative initiatives that encouraged cooperative development of the boundary waters; the establishment of the first bi-national Seaway advocacy organizations; and their relationship to the institutionalization of environmental expertise as well as novel mechanisms of conservation diplomacy. In short, this chapter investigates the links between Seaway advocacy, envirotechnical constructions of expertise, and the construction of bi-nationalism under the auspices of boundary water conservation. These waters, which once played an important role in competitive nation building, became a nexus for nation bridging.

#### *“Progressive” Conservation and Diplomacy*

This chapter is contextually situated within the Progressive era. The American Progressive movement focused on social and political reform; and resource conservation constituted an important component of these broader ambitions. Largely an emergent middle-class movement, Progressives sought to apply technological and scientific knowledge to promote “efficiency” and uplift society by applying a set of practices loosely defined as modernization. These modernization efforts responded to the profligacy, perceived moral degeneration, and corrupting influences that underscored contemporary society. The panacea, Progressives believed, could be found in a series of social, political, and technological reforms designed to mitigate the destruction of resources and values that accompanied the forces of “nationalization, industrialization, mechanization, [and] urbanization.” These forces left Americans with a sense of “dislocation and bewilderment,” which Progressives confronted with a new bureaucratic

reordering of society and nature.<sup>3</sup> In short, Progressives confronted the dislocations of modernity by modernizing. They sought to control, direct, and humanize the forces of modernization; and by doing so, established an epistemic and management regime based on scientific knowledge and bureaucratic order. Conservationism was an indispensable part of this regime, and the political entrenchment of its values was central to the construction of Progressive institutions to govern transboundary resource management.

The Progressive movement, as Daniel Rodgers thoroughly demonstrated, was not an exclusively American phenomenon but a transnational movement whose objectives, practices, and participants routinely transcended national boundaries.<sup>4</sup> The conservation movement formed networks of discourses and actors across the transatlantic world.

Historian Kurkpatrick Dorsey claims that Canadians only tentatively embraced Progressive conservationism and often simply emulated their southern neighbors' activities, but key figures within the national government, in close contact with their American counterparts, supported its application and dissemination in Canada.<sup>5</sup> This chapter explores how actors in Canada and the United States collaboratively instituted a new Progressive, conservationist bureaucratic order to manage shared boundary resources.

In simplified terms, conservationism began with the elementary, but profound acknowledgement that North America's resources were not inexhaustible. The ascendancy of the myth of North American superabundance accompanied the arrival of

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<sup>3</sup> Quotes taken from Robert Wiebe's work on the Progressive Era: Robert Wiebe, *The Search for Order, 1877-1920* (New York: Hill and Wang, 1966), 12.

<sup>4</sup> Daniel Rodgers, *Atlantic Crossings: Social Politics in a Progressive Age* (Cambridge, MA: Harvard University Press, 2000).

<sup>5</sup> Kurkpatrick Dorsey claims this in: Kurkpatrick Dorsey, *The Dawn of Conservation Diplomacy: U.S.-Canadian Wildlife Protection Treaties in the Progressive Era* (Seattle: University of Washington Press, 1998), 11.

the first European settlers, especially when contrasted with a resource depleted Europe. Whenever the need arose, Americans augmented their resource supplies by pushing further into the “unclaimed” interior – where they found more rivers, timber, minerals, arable lands, and game. This dynamic frontier discouraged sustainable practices. When users exhausted local resources beyond their productive capacity, they simply moved on. Nineteenth century developments in transportation and other technologies exacerbated this process, and, as William Cronon demonstrated, this exploitive process was inextricably tied to industrialization and the attendant development of commodity networks linking growing urban centers with hinterlands.<sup>6</sup> Like an earlier era of canal building, the construction of railroads expanded access to the continent’s interior and increased the pace and scale of resource depletion. These patterns are replicated in the Canadian context, where the construction of the Canadian Pacific and National Railways facilitated western movement and resource extraction. Writing a generation later, Aldo Leopold aptly captured this amplification: “The conquest of nature by machines has led to much unnecessary destruction of resources. Our tools improve faster than we do.”<sup>7</sup> Conservationists sought to rectify this imbalance by redeploying science and technology to ameliorate the exploitive excesses of industrial capitalism.

A wide historical literature on conservationism continues to circulate among environmental historians, and the touchstone for this dialogue remains Samuel P. Hays’s *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (1959). Hays expressly set conservationism in its Progressive context, and

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<sup>6</sup> William Cronon, *Nature’s Metropolis: Chicago and the Great West* (New York: W.W. Norton & Co., 1991).

<sup>7</sup> Aldo Leopold, “Wildlife in American Culture,” *Readings in Wildlife Conservation*, James A. Bailey, ed. (Washington, DC: The Wildlife Society, 1974), 3.

argued that growing concerns about order, rationality, and permanence underscored the conservation movement.<sup>8</sup> However, the discussion has since been taken in myriad directions. For example, Roderick Nash's *Wilderness and the American Mind* (1967) explored how Americans have dynamically and divergently conceptualized wild spaces, making useful distinctions between conservation and preservation discourses.<sup>9</sup> More recently, Karl Jacoby's *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (2001) argued that the foregoing literature's focus on "the pantheon of conservationist prophets" neglected the role and responses of "ordinary folk." Jacoby uncovered this "hidden history" by looking at the complex realities of conservation as seen from the bottom up.<sup>10</sup>

By the 1890s, the inexhaustibility myth itself was no longer sustainable. Overfishing demonstrably depleted the Great Lakes' fisheries, vast tracks of forest had been clear-cut, several species – notably the bison and passenger pigeon – had been hunted to the brink of extinction and beyond, and industrial activity increasingly polluted the air and water. In response to these perceived anthropogenic, ecological pressures a small group of scientists and other experts dedicated themselves to addressing the "waste" of natural resources.<sup>11</sup> These early conservationists, like the renowned forester Gifford Pinchot, focused on the need to conserve renewable resources for future

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<sup>8</sup> Samuel P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation movement, 1890-1920* (Cambridge, MA: Harvard University Press, 1959).

<sup>9</sup> Roderick Nash, *Wilderness and the American Mind* (New Haven, CT: Yale University Press, 1967).

<sup>10</sup> Karl Jacoby, *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation* (Berkeley, CA: University of California Press, 2001), 1-3. The "pantheon" quote is taken from Richard Grove on page 1.

<sup>11</sup> There is some debate about the actual extent of resource exhaustion. For example, historical geographer Michael Williams questioned the truism that forests had seriously retreated by the turn of the 20<sup>th</sup> century. He argued that although new regions "rose in prominence and supremacy of production," older regions "were never completely eliminated" and "continued to thrive." Michael Williams, *Americans and Their Forests: A Historical Geography* (Cambridge: University of Cambridge Press, 1989), 193-194.

generations. Scientists, especially in the fields of forestry and hydrology, promoted the efficient use and scientific management of America's natural resources. Their vision deployed scientific knowledge in tandem with government power to ensure impartiality. In the words of Samuel Hays: "Conservationists envisaged... a political system guided by the ideal of efficiency and dominated by the technicians who could best determine how to use it."<sup>12</sup> Essentially utilitarian in outlook, conservationists did not aim to save nature for aesthetic or altruistic reasons, but to ensure the long-term vitality of the American economy.<sup>13</sup>

Many conservationists recognized that addressing resource depletion required cooperation across political boundaries. Theodore Roosevelt captured this imperative, stating: "It is evident that natural resources are not limited by the boundary lines which separate nations, and that the need for conserving them upon this continent is as wide as the area upon which they exist."<sup>14</sup> However, simply identifying the need to cooperate did not remove the obstacles to doing so. In fact, the competitive exploitation of natural resources furnished the central conflicts in Canadian-American relations around the turn of the century. Boundary disputes tended to center around disproportionate rates of resource extraction in highly contested spaces, such as inland and coastal fisheries. Even the perennial issue of reciprocal trade arrangements was, at its core, a question about access to natural resources markets.

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<sup>12</sup> Hays, *Conservation and the Gospel of Efficiency*, 3.

<sup>13</sup> In contrast, preservationists tended to focus on the aesthetic and intrinsic value of species and "wild" spaces. However, these two movements are not always easy to parse, and their entanglement often produced political potency. Theodore Roosevelt thoroughly embodied this entanglement. He had ties to the utilitarian vanguard, but also appreciated the aesthetic value of "wilderness." For a study of Roosevelt's relationship to the Conservation movement, see: Paul Cutright, *Theodore Roosevelt: The Making of a Conservationist* (Urbana, IL: University of Illinois Press, 1985).

<sup>14</sup> Theodore Roosevelt to Governor General Lord Earl Grey, December 24, 1908, LAC, *Records of the Governor General's Office*, RG7-G-21 (R178-3-5-E), Vol. 224, File 342, Reel T-1180, "Conservation of Natural Resources – Conference at Washington, 1919."

Seaway advocates situated their arguments in this Progressive dialogue and evinced a conservation ethos that associated their waterway proposals with the promotion of efficiency, reduction of waste, and the modernization of continental transportation. Moreover, like Roosevelt, Seaway advocates began to recognize the imperative of transboundary cooperation, and proposed new mechanisms for conservation diplomacy, as well as a bi-national management regime to govern the various uses of boundary waters. In the first decade of the 20<sup>th</sup> century, Seaway advocates, conservationists, and diplomats crafted institutions that contributed to the construction of a shared envirotechnical regime across the boundary waters. These institutions evinced Progressive, conservationist ideals of bureaucratic order and process standardization, informed by scientific objectivity and technical expertise; and their political establishment benefited from a climate of unprecedented Anglo-American willingness to resolve outstanding disputes.

During the Progressive era, Britain and United States engaged in a long process of *rapprochement*; where Canada, from the British perspective, presented a recurrent complication. Under the terms of the British North America Act of 1867, the newly formed Dominion of Canada had a free hand in domestic issues, but no official voice in foreign policy making. This system lacked a direct-channel of communication between Washington and Ottawa, which hindered the resolution of Canadian-American disputes. As Canadian historian Oscar Skelton put it, in gendered terms: “Miss Ottawa had a voice, but etiquette forbade her from speaking to Mr. Washington except through Papa London.”<sup>15</sup>

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<sup>15</sup> Oscar Skelton, ed., *The Life and Letters of Sir Wilfrid Laurier* (New York: Century Company, 1922), 2.

From the Canadian perspective, *rapprochement* often connoted British willingness to sacrifice Canadian desires to improve relations with the United States. The Alaskan Boundary dispute is illustrative of this conviction. In 1903, a British arbiter, Lord Alverstone, upheld the United States' claim to disputed Alaskan territory, thus confirming, for many Canadians, the alacrity with which the British would abandon Canadian interests.<sup>16</sup> This, and other perceived instances of British perfidy strengthened Canadian resolve to defend its own foreign interests. Likewise, Britain was eager to relinquish the banality involved in resolving persistent, and to their minds often-petty, continental boundary and resource disputes, and instead, focus on larger imperial issues.<sup>17</sup> These factors set the stage for the establishment of direct diplomatic communication between the United States and Canada.

The growing conservation movement and shifting character of Canadian-American relations fostered an atmosphere of intensified desire for transboundary environmental cooperation among resource managers and politicians. More often than not, diplomats wanted simple solutions to complex ecological and social problems; however, by deferring to the expertise of scientists and engineers they could absolve themselves of recommending tough, often unpopular courses of action. According to historian Kurkpatrick Dorsey, no magic formula for success or failure existed. It relied on the ability of conservationists to justify recommendations on both economic and sentimental grounds.<sup>18</sup> For example, Dorsey, whose work focuses on Progressive era wildlife treaties, credits the failure of the Inland Fisheries Treaty of 1908 – intended to

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<sup>16</sup> For a concise recounting of the Alaskan Boundary dispute see: Dorsey, *The Dawn of Conservation Diplomacy*, 6-8.

<sup>17</sup> John Herd Thompson and Stephen J. Randall, *Canada and the United States: Ambivalent Allies* (Athens, GA: University of Georgia Press, 2002), 72-76.

<sup>18</sup> Dorsey, *The Dawn of Conservation Diplomacy*, 15-16, 23.

regulate the commercial catch on inland boundary waters and combat the “tragedy of the commons” – to the lack of an aesthetic argument. He claims that unlike birds or seals, “few people found fish beautiful” and this undermined the Treaty’s popular appeal. Dorsey further asserts that, in this instance, the utilitarian argument lacked potency in the face of the immediate economic pressures confronted by the commercial fishing industry.<sup>19</sup> This race to the bottom encouraged short-term maximization and exacerbated wildlife depletion. Conversely, the Migratory Bird Treaty of 1916 succeeded where the Inland Fisheries Treaty had failed. The Migratory Bird Treaty prohibited the capture, killing, and other incidental forms of interference with the migratory patterns of certain species of birds. Ratified in December 1916, the Migratory Bird Treaty became the first U.S.-Canadian “broadly effective wildlife protection treaty,” and Dorsey attributes its success to the combination of mounting scientific evidence that claimed bird protection made agricultural sense, a weakening of economic arguments against protection, along with the popularity and aesthetic appeal of birds.<sup>20</sup>

Dorsey only passingly refers to the most successful and prominent agreement – the Boundary Waters Treaty of 1909 – but briefly recognizes the Treaty as “the first successful conservation accord.”<sup>21</sup> It is difficult to assess the relative importance or success of the two treaties, especially since both remain in effect, but some fundamental distinctions can be drawn. First, the Migratory Bird Treaty was explicitly designed to *protect* avian wildlife and enlisted both preservationists and conservationists to this end. The negotiators of the Boundary Waters Treaty focused on maximizing *utility* and conserving resources, effectively disregarding scenic or biotic preservation. The scope

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<sup>19</sup> Ibid., 16, 170

<sup>20</sup> Ibid., 237.

<sup>21</sup> Ibid., 8-9.

and authority of the two treaties also differ dramatically. The former protects a predetermined, but occasionally updated list of migratory birds; the latter established a permanent institutional mechanism that governs the uses and management of all waters traversing the national boundary. This mechanism – the IJC – administers certain uses, adjudicates disputes, and advises both countries on cooperative management and development. In short, the Boundary Waters Treaty effectively inaugurated a bi-national envirotechnical management regime, revising the configuration of actors, institutions, and some basic assumptions involved in boundary water management. This does not diminish the specific importance of the Migratory Bird Treaty, but emphasizes the broader significance of the Boundary Waters Treaty.

The underlying sentiment – embodied by the Boundary Waters Treaty and IJC – can be traced to 1892 when representatives in Congress and the House of Commons advanced separate, but concurrent legislative gestures that encouraged cooperative development of the boundary waters.

*The International Deep Waterways Association*

In 1892, John Lind (R-MN) and Col. Frederick Denison (MP-West Toronto) almost concurrently introduced motions advocating the cooperative development of Great Lakes-St. Lawrence navigation into their respective legislative houses. By doing so, they inaugurated a 62-year bi-national Seaway debate. Although neither resolution received legislative approval, they mark a watershed moment in the Seaway narrative. The motions reflect amplified interest in the further development of the boundary waters on both sides of the border, and a newfound willingness to work together. In their wake, the

Toronto Municipal Council convened a “Toronto Deep Waterways Convention” in late September 1894.

In his opening remarks, Toronto’s Mayor, Warring Kennedy acknowledged John Lind’s resolution as an impetus for this meeting, read it aloud, and commented that it encouraged Canadians to find sympathy within the U.S. government for the idea to make the Lakes and St. Lawrence navigable for ocean-going vessels.<sup>22</sup> Col. Frederick Denison reaffirmed his commitment to deep waterways and suggested that American tariff concessions might serve as a *quid pro quo* for Canadian participation, an idea to which the protracted Seaway debate often returned.<sup>23</sup> The 1892 resolutions coalesced a bi-national group of individuals around a common, if still ill defined cause. However, the Convention’s membership underscores the Seaway’s region specific appeal. Composed primarily of representatives from the U.S. Midwest and Ontario, they mostly represented Great Lakes municipalities or regional commercial interests – locales and groups that persisted as the base for Seaway advocacy over the following half-century.<sup>24</sup>

Kennedy’s opening remarks are illustrative of the grandiose scope of the participants’ ambition, reinforce the religious-utilitarian overtones described above, set their hopes in a bi-national context, and contain racial and linguistic comments that are provocative for today’s audience:

Nature has dealt very bountifully with us, giving us noble streams and lakes. These vast waters are at our command and Nature invites us to *supplement* the work she has done, so that we may control these extensive sheets of water and utilize them for the benefit of mankind in facilitating the transportation of the products of the West to the Atlantic seaboard, in order that the millions on the eastern shores may share in the products of

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<sup>22</sup> International Deep Waterways Association, *Proceedings of the First Annual Convention*, 393 – A report of the Proceedings of the Toronto Convention of 1894 were included in an appendix, see pages 390 to 449.

<sup>23</sup> *Ibid.*, 395.

<sup>24</sup> *Ibid.*, 390.

the fertile fields of the west, by having them transported at a very low cost... The Anglo-Saxon race has been entrusted with the destinies of this North American Continent. The wonderful energy displayed by that race is to be seen all around us, both in the United States and Canada. This Anglo-Saxon race is destined to control the world... To us, then, is committed this great trust, and I believe we shall prove ourselves equal to the emergency.<sup>25</sup>

The imperative to “supplement” Nature’s work for the “benefit of mankind” is unambiguous and connects this discourse to the perfectibility of nature idea articulated during the era of internal improvements. Like the Hymn set out at the chapter’s beginning, Kennedy’s statement is a transitional artifact, its ethereal preamble contrasts with its pragmatism directed at managing transportation costs. The latter part of his statement is disconcerting to present sensibilities, but showcases a belief commonly held by the Anglo-elite that their “destiny” meant controlling the world. A shared white English-speaking heritage provided a touchstone to unite the energies of Canada and the United States. This raises questions about the composition of participants in Seaway advocacy and their social construction of the Great Lakes-St. Lawrence. Ironically, men typically considered outside the “Anglo-Saxon race” expended most of the physical labor to dig existing canals and construct existing navigation works. Kennedy’s emphasis on the English tongue also alludes to perennial French Canadian opposition to the Seaway. The notion that the St. Lawrence is an “English” river – the St. Lawrence not the St. Laurent and a river not *un fleuve* – was anathematic to French Canadians. This community typically saw its further development as a gambit by the English-speaking

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<sup>25</sup> Ibid., 391 (Emphasis added).

mercantile community to further consolidate its economic hegemony and perpetuate the attendant subjugation of French Canadian economic and cultural interests.<sup>26</sup>

This meeting of waterway advocates from Canada and the United States made a significant intervention into the tenor of conversations about St. Lawrence development for the purposes of navigation. The Toronto Deep Waterways Convention, the advocacy organization it spawned, and the legislative initiatives that propelled them incited a new dialogue that emphasized mutual interest and cooperative development. The political mechanisms necessary for cooperation remained undeveloped, but the Convention's participants opened this discourse through nine resolutions that articulated their *raison d'être*, defined their objectives, and devised a program to advance their ambitions.

The Convention produced two substantive outcomes. First, the report of the Committee on Permanent Organization noted: the “greatest bar to our success has been that hitherto we have been absolutely without any form of thorough or systematic organization. We have been carrying on a sort of guerilla warfare against an enemy entrenched behind a barrier of wealth, of selfishness and of indifference. Our association must be as wide as its object and be established upon an international basis.”<sup>27</sup> To address this deficiency and confront opponents – principally eastern ports and the railroads – they established the International Deep Waterways Association (IDWA), elected officers and representatives, and set an institutional advocacy agenda.<sup>28</sup>

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<sup>26</sup> The participants specifically noted opposition found in Montreal, worried about the loss of transshipment business. *Ibid.*, 433.

<sup>27</sup> *Ibid.*, 432.

<sup>28</sup> Oliver A. Howland (M.P.P. Toronto, ON) became the Association's President, Lyman E. Cooley (Chief Engineer, Chicago, IL) and James Fisher (M.P.P. Winnipeg, MB & Delegate of the Farmers' Institute of Manitoba) its Vice Presidents, and Frank A. Flowers (Superior, WI) the Executive Secretary. For the full list of officers, state and provincial representatives, and executive board, as well as their recommended agenda (including the drafting of a constitution, by-laws, and formulating a statement of purpose) see: *Ibid.*, 448-449.

Previous advocates, notably William Hamilton Merritt, tended to be solitary, quixotic individuals who advanced their dreams through force of personality, vision, and tireless effort. The IDWA consolidated and institutionalized the efforts of deep waterway advocates – Midwestern and central Canadian and agricultural and manufacturing interests, and Great Lakes harbors – and provided a mouthpiece to articulate their objectives. The Association assumed an explicitly bi-national identity, designed to reflect the political geography of their “object” – the Great Lakes-St. Lawrence basin. The IDWA’s character changed the dynamics of waterway advocacy by providing discursive space for a cooperative transboundary developmentalist agenda. This formalization of bi-national advocacy established a model emulated by Seaway proponents over the next half-century.

The Toronto Convention’s second substantive outcome is the platform adopted by its delegates; comprised of a statement of purpose, six foundational resolutions, and three supplemental ones. The statement of purpose encapsulated the organization’s general mission: “promoting the union of the lakes and the high seas by waterways of the greatest practicable capacity and usefulness; and, recognizing the supreme utility of such waterway development.” Their emphasis on practicality and utility reveals the centrality of conservation and efficiency. The first resolution recommended channels and locks 21 feet deep, and designed to accommodate expansion to 26 feet. Curiously, the St. Lawrence is not mentioned in the statement of purpose, an omission qualified by the second resolution. This resolution: “recognizes the utility of the *natural* route to the sea by the St. Lawrence river as most quickly and cheaply improvable,” but added the important *caveat* that the commercial necessity of the route to the Atlantic via the Hudson

River “also impressed” the delegates.<sup>29</sup> To garner wider support and placate certain delegates they included this alternative route in their platform. The third and fifth resolutions are retrospectively the most significant. They read:

Resolved, That we recommend that the governments of Canada and the United States appoint a joint commission to consider and report fully upon the advisability of the two countries uniting to establish deep ship channels from the great lakes to the sea, free and neutral, at joint expense, under joint control, as well as the probable character and expense thereof, together with the equitable share that should be charged to each country, and whether the two countries may not co-operate in said undertaking in all matters necessarily international in character.

Resolved, That as a preparation for the joint promotion of common interests, it is desirable that a permanent court should be constituted for the decision by rules of law of all questions of an international character which may in any wise arise between the peoples and governments of the British empire and the United States.<sup>30</sup>

The parallels to the IJC, which later embodied these recommendations, are striking. The IDWA did not persist to see these resolutions fulfilled, but accomplished an immediate objective – the appointment of an *ad hoc* joint, Canadian-American commission to report on the feasibility of continuous Great Lakes-Atlantic Ocean navigation.

In February 1895, Senator William F. Vilas (D-WI) introduced a motion asking the President to appoint three *experts* to convene with a Canadian correlate and report on the feasibility and cost of canals to allow ocean-going ships to travel between the Great Lakes and Atlantic Ocean.<sup>31</sup> The Senate Committee on Instate and Foreign Commerce favorably reported Vilas’ bill out of committee, incorporated it in the sundry civil

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<sup>29</sup> Ibid., 447.

<sup>30</sup> Ibid., 447-448.

<sup>31</sup> Paraphrased from: United States, Congress, House of Representatives, *Report of the United States Deep Waterways Commission*, House Document 192, 54 Congress, 2 Session (January 18, 1897), 7.

appropriation bill, and it became law in March 1895.<sup>32</sup> In response, the IDWA dispatched a commission to Ottawa, led by Col. Denison, who successfully secured the Dominion government's assurance that Canada would reciprocally appoint three commissioners.<sup>33</sup>

Before President Cleveland appointed the required commissioners, the IDWA held a second convention in Cleveland between September 24 and 26, 1895. The vastly expanded and highly technical agenda of this meeting reflects the Association's growing influence and professionalization. Participants emphasized quantitative, statistical analysis of the costs and benefits of deep-water navigation; discussed the hydrologic and geologic character of the Great Lakes-St. Lawrence at length; considered comparative studies of other canal systems; and debated the technical detail of proposed infrastructure – such as lock construction, lake level regulating structures, and dredging implements. The proceedings of the Cleveland meeting differed substantively from the Toronto convention a year earlier. The Association deployed scientific and technological expertise to buttress a central claim: that deep waterways would serve the *economic interests* of Canada and the United States. They also redoubled their emphasis on efficiency and the elimination of waste. The language of conservation became the *lingua franca* of Seaway advocacy, and its constituents sought the amalgamation and deployment of scientific and technological expertise backed by government power. The Association's executive secretary, Frank Flowers claimed: "It is as much the duty of

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<sup>32</sup> For details on its passage and enacted, on March 2, 1895, see: United States, Congress, House of Representatives, *Laws of the United States Relating to Improvements of Rivers and Harbors*, House Document 1491, 62 Congress, 3 Session, Vol.1 (August 12, 1913), 734-745.

<sup>33</sup> The Prime Minister, Sir McKenzie Bowell, and the Minister for Railways and Canals, John Haggart, provided these assurances. See: International Deep Waterways Association, *Proceedings of the First Annual Convention*, 15.

governments to improve, expand and *conserve* the public resources as it is that of a father to protect and educate his children.”<sup>34</sup> This belief in the appropriateness of paternalistic government intervention premised on “objective” scientific evidence paid political dividends, and advocates were justifiably hopeful and enthusiastic about a more navigable future along the border.

However, the perceived success of the IDWA also mobilized opposing forces that checked the ambitions of Seaway advocates for the following 60-years. The motivation of Seaway opponents varied. Place-based opposition came from Montreal and Buffalo, where local shippers feared the loss of transshipment business; Great Lakes shipping companies feared competition from larger, salt-bottomed vessels; nationalists on both sides of the border remained suspicious of the motives and participation of the other country; and some simply believed the idea was too audacious – for example, a member of the House of Commons stated: “a more wildcat scheme...was never presented to Parliament.”<sup>35</sup> Yet the most persistent and vigorous source of opposition emanated from railroad interests, who had a vested interest in ensuring the continued ascendancy of their transportation modality.

The argument from railroad interests was not meritless. Railroad networks already existed, represented unprecedented levels of infrastructure investment, and played an integral part in the Second Industrial Revolution. Moreover, rail transportation was not subject to the same seasonal contingencies as northerly water-based transportation. Accordingly, railroad interests argued that the expansion of deep

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<sup>34</sup> Ibid., 24 (emphasis added).

<sup>35</sup> Said by William Mulock (Liberal MP – York North), in: Canada, Parliament, House of Commons, *Debates*, 7 Parliament, 4 Session, Vol.37, No.1 (April 30, 1894), 2184.

waterway transportation was unnecessary, climatically inappropriate, produced transportation redundancies, and undermined investment in existing infrastructure.

To counter this emergent opposition, the IDWA engaged in an extensive “counter-propaganda” campaign. According to Secretary Frank Flowers, they advanced the Seaway’s case “in and out of season through newspapers, magazines, public lectures, arguments before legislatures, at political meetings, in college courses, and elsewhere until the deep water tune was familiar to all ears from Manitoba to Mexico, Quebec to Montana, and New York to Texas.” They directed their most incisive criticism toward railroad opposition, claiming: “no further relief was possible from all-rail transportation, and that for the present the development of railways... had reached its limit.”<sup>36</sup>

With Congressional approval and Canadian assurances for a joint deep waterway study, the IDWA accomplished a major component of its platform. However, at the Cleveland meeting deeper fractures underlying the deep-water coalition began to show. L.E. Cooley, the Association’s Vice President and Chicago’s Chief Engineer, felt obliged to defend the proposed diversion of Great Lakes water (estimated at 20,000 cfs) through Chicago’s Sanitary Canal, and its probable effect on lake levels. This was a highly contentious subject for Canadian and other downstream delegates who worried about its adverse consequences for navigation and hydroelectric development.<sup>37</sup> Moreover, the St. Lawrence did not receive much attention in the second Convention’s proceedings. Instead, the proposed expansion of the Erie Canal – to a depth of nine feet – and other

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<sup>36</sup> International Deep Waterways Association, *Proceedings of the First Annual Convention of the International Deep Waterways Association*, 11.

<sup>37</sup> Cooley’s remarks are found in: *Ibid.*, 361-368. However, this is one of the most extensively discussed and debated issues at the Convention, see: *Ibid.*, 125-153, 358-360, 368-383.

alternative routes captured the delegates' focus.<sup>38</sup> The considerable amount of deliberation focused on alternative routes and Chicago's controversial diversion reveals an Association struggling to sustain a coalition of divergent, often competing interests. An envirotechnical regime premised on cooperative, dispassionate management of boundary waters remained nascent and unconsolidated.

The IDWA lost momentum and disappeared shortly after the Cleveland Convention. Doubtlessly, internal divisions contributed, but the ebb in activity and disbandment also had external causes – a return to relative prosperity for western grain-growers by 1897, assuaged discontent with railroad rates, and sapped zeal for alternative transportation modes. The deep waterway question became tied up in continuous investigations and reports; and Canada continued deepening its canals to 14 feet. It completed this task in 1904, and this depth accommodated most lake ships' cargo capacity. Taken together, these factors temporarily took the drive out of the deep waterways movement. More fundamentally, the IDWA was a fragile union of incongruous concerns, united by preference of transportation modality but divided on the specifics of where and for the benefit of whom. By 1895, the Association's seams began to show and then quickly unraveled.

The IDWA, although short-lived, left a structural and discursive legacy appropriated by subsequent advocacy efforts and boundary resource managers. These include: its bi-national character; emphasis on cooperative action, control, and mutual benefit; a conservationist program to achieve its objectives by deploying scientific and technological expertise in tandem with government power; and the express goal to

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<sup>38</sup> The proposed Erie expansion was discussed at length on: *Ibid.*, 241-251, 273-286, & 384-389. Whereas the St. Lawrence only receives specific attention on: *Ibid.*, 161-164, and only in conjunction with a discussion of navigation on Lake Champlain.

establish permanent, institutional mechanisms to resolve boundary disputes. In retrospect, they helped incite an envirotechnical regime change. The IDWA encouraged the normalization of bi-nationalism and mutual interest as the fundamental precepts of boundary water management. It appropriated and disseminated the discourse of conservationism, which emphasized utility, efficiency, and the objective resolution of disputes under bureaucratic order. Finally, it began to devise a novel set of institutional arrangements to govern the boundary waters. The IDWA did not persist to see its long-term objectives fulfilled, but its immediate legacy included the appointment of the first *ad hoc* joint commission – the International Deep Waterways Commission (IDWC). The links between the organizations are apparent in membership – three of the IDWC’s six commissioners arrived directly from the IDWA – and in task. Taking the IDWA’s recommendation almost verbatim, Canada and the United States instructed the IDWC to report on the feasibility of deep waterways from the Lakes to the Ocean.

*The International Deep Waterways Commission, 1895-1897*

In November 1895, President Cleveland announced his three appointments to the IDWC. His delegates included James B. Angell, Lyman E. Cooley, and John E. Russell. Two weeks later, Prime Minister McKenzie Bowell appointed three corresponding Canadian delegates: O.A. Howland, Thomas C. Keefer, and Thomas Munro.<sup>39</sup>

Initially, these appointments encouraged waterway advocates. The inclusion of Howland and Cooley gave the IDWA direct representation; Keefer served as Canada’s Chief Engineer of Public Works and presented a paper at the Cleveland convention

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<sup>39</sup> Cleveland announced his appointees on November 2, 1895 – James B. Angell was the President of the University of Michigan, Lyman E. Cooley was Chicago’s Chief Engineer and Vice President of the IDWA, and John E. Russell was a former Democratic Representative from Massachusetts. On the Canadian side O.A. Howland was an M.P.P. Toronto and the President of the IDWA, and Thomas C. Keefer and Thomas Munro were experienced civil engineers. For their biographical details see: *Ibid.*, 451.

advocating the St. Lawrence route; and Thomas Monro served as the president of the Canadian Society of Civil Engineers, and was the engineer-in-charge of the 14-foot Canadian canals under construction.<sup>40</sup> The final two commissioners' predisposition toward the expansion of deep waterway navigation was more enigmatic. In addition his job as the president of the University of Michigan, James B. Angell served as a diplomat, engineer, and legal expert. The inclusion of John E. Russell on the Commission seems like a political calculation. Russell represented New England and the Democratic Party faithful, and neither of these constituencies tended to view the Seaway idea favorably.

Although the Commission's two national delegations met a number of times and exchanged technical data, it quickly became clear that they planned to separately advance national viewpoints. The American delegation focused on the most advantageous all-American route, whereas the Canadian delegation concerned itself with demonstrating the superiority of the St. Lawrence. These divergent interpretations of their mandate are reflected in the reports they produced.

The American delegation submitted its report to President Cleveland in January 1897. They confessed that the St. Lawrence route had advantages – it offered the shortest route for direct trade with Europe, and relative to potential capacity would be the cheapest to construct. However, the commissioners adamantly claimed the St. Lawrence did not offer a viable solution to the United States' national transportation deficiencies. They argued that foreign trade was “largely incidental” to domestic east-west traffic, which the St. Lawrence ran too far north to accommodate. To their minds, this made its

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<sup>40</sup> Keefer's paper is found in: *Ibid.*, 160-161.

development of “very doubtful utility.”<sup>41</sup> Instead, the commissioners focused on the development of two alternatives to more effectively link the Great Lakes with the Hudson River – one by way of the Mohawk, Oneida, and Oswego rivers, and a second through Lake Champlain.

The Canadian delegation composed three brief reports that advanced very cautious and tentative conclusions.<sup>42</sup> In their first report, the Canadian commissioners noted with alarm the growth of American sentiment in favor of an all-American route, and suggested that they should vigorously investigate the Canadian portion of the international route for comparative purposes.<sup>43</sup> In their second, interim report they decided to devote their limited funds to a “preliminary survey of the section between Lake St. Francis and the Richelieu River,” claiming this section would “become one of commanding necessity,” if their American counterparts favored a collaborative project.<sup>44</sup> In short, their perception of the American delegation’s posture conditioned the focus and recommendations of the Canadian Commissioners’ reports. Their final report expressed pleasure – perhaps relief – that the American report stated that the St. Lawrence–Lake Champlain–Hudson River route merited further attention. The Canadian delegation’s final recommendation reflected their tentative attitude throughout the enterprise: If the United States desired to cooperate on an international route, and if Canada desired to participate, then Canada should appropriate sufficient funds “to proceed with the surveys

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<sup>41</sup> United States, Congress, House of Representatives, *Report of the United States Deep Waterways Commission*, House Document 192, 54 Congress, 2 Session (January 18, 1897), 16-17.

<sup>42</sup> The single American report was 263 pages, whereas the three Canadian reports had 63 cumulative pages. The three reports include – a preliminary report on March 10, 1896, an interim report on August 20, 1896, and a final report on June 17, 1897. See: Canada, Parliament, House of Commons, Deep Waterways Commission, *Deeper Waterways from the Great Lakes to the Atlantic: Reports of the Canadian Members of the International Commission*, 61 Victoria, Sessional Papers No.16A (Ottawa: Her Majesty’s Printer, 1898), 7-9, 13-15, 23-32.

<sup>43</sup> *Ibid.*, 9.

<sup>44</sup> *Ibid.*, 14.

and estimates in that portion of the route that lies within her territory.”<sup>45</sup> This recommendation is repeatedly qualified, conservative, and contingent upon reciprocal American action. The Canadian representatives believed the United States demonstrated greater interest in expanded waterways, and that cooperative action would offer Canada the possibility of reclaiming an equitable share of the interior’s commerce.<sup>46</sup> Despite this inducement, Canada continued to proceed hesitantly and with a healthy dose of skepticism about their American counterparts’ motives and commitment to cooperation.

Following The IDWC reports, the Army Corps of Engineers conducted another investigation of Great Lakes to the Atlantic navigation routes. Their report, submitted to Congress in June 1900, curiously emphasized “national defense” as the principal reason to reject the St. Lawrence route in favor of an all-American alternative.<sup>47</sup> Perhaps stranger, given the preceding fervor, the USACE report evoked only limited interest in government circles and among the public. Most congressmen found the cost estimates prohibitive, and New York began to seriously discuss enlarging the Erie Canal to accommodate barges of up to 1,000 tons. An Erie “barge canal” could more quickly be constructed to alleviate the specter of a Midwestern transportation crisis, without cost to the national treasury. New York State legislators authorized the Erie Barge Canal in 1903, but with insufficient capital, public apathy, and inadequate machinery it was not completed until 1918. By that date, lake ships’ dimensions far exceeded the barge canal’s ability to accommodate them. This dimensional inadequacy led to diminished revenue and insufficient funds to cover the costs of operation and maintenance.

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<sup>45</sup> Ibid., 25.

<sup>46</sup> Ibid., 32.

<sup>47</sup> This over 1000 page report can be found in: United States, Congress, House of Representatives, *Report of the Board of Engineers on Deep Waterways Between Great Lakes and Atlantic, 2 Parts, and Atlas*, House Document 149, 56 Congress, 2 Session, (December 2, 1900).

Eventually, New York officials sought to unburden the state by turning the canal over to the federal government.<sup>48</sup>

Although President Cleveland endorsed the Seaway idea, and between 1897 and 1900, Congress had appropriated over half a million dollars to study Lakes to Atlantic routes, protracted investigations and the inability of deep waterway advocates to resolve internal differences curtailed the movement. The IDWA disappeared before the turn of the century, attenuating private advocacy and public enthusiasm for Seaway idea.

*The International Waterways Commission, 1902-1907*

The collapse of private advocacy efforts left the Seaway idea to diplomatic and institutional assessments of the boundary waters. The first formal articulation of the idea to create a specific diplomatic mechanism to manage boundary waters appeared in September 1895, at the Fourth International Irrigation Congress. Canada's delegate, Col. J.S. Dennis, and his Mexican counterparts advanced a resolution asking the United States to appoint "an international commission to act in conjunction with the authorities of Mexico and Canada in adjudicating the conflicting rights... on streams of an international character."<sup>49</sup> Although the resolution was adopted and Canada formally requested American participation in this scheme, the U.S. Secretary of State, James Olney, politely declined.<sup>50</sup>

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<sup>48</sup> For a history of the Erie Barge Canal, see: Noble E. Whitford, *History of the Barge Canal of New York State* (Albany: J.B. Lyon Company, 1921).

<sup>49</sup> The Fourth Annual International Irrigation Congress was held in Albuquerque, New Mexico. For an account of these proceedings see: United States, Congress, Senate, *Address to the People of U.S. by National Irrigation Congress*, Senate Document 253, 54 Congress, 1 Session (May 11, 1896), 3.

<sup>50</sup> The Order in Council requesting U.S. participation can be found in: Canada, Parliament, Privy Council, *Order in Council No.1895-3645* (January 8, 1896), LAC, *Records of the Privy Council Office*, RG-2, Series A-1-a, Vol.670, Reel C-3640, "Irrigation – Min. Interior 1895/12/13." Olney's negative response can be found in: Chirakaikaran Joseph Chacko, *The International Joint Commission between the United States of America and the Dominion of Canada* (New York: AMS Press, 1932 & 1968), 73.

The International Deep Waterways Commission provided an *ad hoc* template for cooperative investigation of boundary water development. In 1902, Congress took steps to renew and substantially formalize this bi-national arrangement. Section IV of the 1902 Rivers and Harbors Act contained a provision that asked the President to invite Great Britain to form an international commission, composed of three American and three Canadian representatives to “investigate and report upon the conditions and uses” of the boundary waters, including “all the waters of the lakes and rivers whose natural outlet is by the River St. Lawrence to the Atlantic Ocean.” The legislation specifically directed the proposed commission to report on conditions affecting navigation and make recommendations for “improvements and regulations” to “best subserve” the interest of navigation in these waters.<sup>51</sup>

The provision’s paramount concern was navigation, but also addressed the contentious issue of Great Lakes water diversion.<sup>52</sup> Section IV alluded to the Chicago Sanitary Canal’s extra-basin transfer of Lake Michigan water to transport urban sewage to the Mississippi River. This diversion affected the water levels of the entire Great Lakes basin, lowering their navigable depth. In accordance with the Rivers and Harbors Act, President Theodore Roosevelt sent a note of invitation to London’s Foreign Office in July of 1902, and appointed three American representatives in October.

It took the Foreign Office more than two years to inform the Canadian government – a superlative example of the tortuous route navigated in the course of British-Canadian-American diplomacy. When the Governor General of Canada finally

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<sup>51</sup> Recounted in: International Joint Commission, *Papers Relating to the Work of the International Joint Commission* (Ottawa: His Majesty’s Printer, 1929), 8-9; also see: Chacko, *The International Joint Commission*, 75.

<sup>52</sup> Unlike the earlier invitation extended by Canada, in 1895, Mexico disappears from the conversation in the 1902 invitation.

received the invitation, in January 1905, he promptly took action and appointed the requisite Canadian commissioners, thereby establishing the International Waterways Commission (IWC).<sup>53</sup>

An investigative body tasked with reporting observations and making recommendations to the two national governments, the IWC prolifically fulfilled its mandate.<sup>54</sup> Its reports covered a wide range of subjects – the diversion of water at Niagara Falls, navigation conditions at Sault St. Marie, applications to construct regulating structures affecting lake levels, defining the boundary line through Lake Erie, etc. It approached these issues in a manner consistent with the conservation principles that underscored its establishment. Current scientific and technological understanding informed IWC recommendations, and state power could be applied to enforce its suggestions. Unlike the International Deep Waterways Commission, the IWC's two national delegations worked directly and cooperatively with one another, embracing the terms of equal representation and participation.

To George Gibbons, the Canadian Chairman, the inadequacy of a purely investigative mandate quickly became clear. He believed the Commission's strictly advisory and referential role resulted in an uneven application of government action with respect to their recommendations. Gibbons wanted to establish a series of internationally recognized, general principles to regulate the uses of the boundary waters. He felt that

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<sup>53</sup> There was some turnover in the Commission's membership; most notably James Pitt Mabee the first chairman of the Canadian delegation quickly stepped down to take a position in Ontario's Court of High Justice and was replaced by the dynamic George Gibbons in November of 1905. Gibbons served as the Canadian chair for the duration of the IWC's operation and beyond, his fellow Canadian delegates were William F. King and Louis Coste. The American delegates consisted of Brigadier General O.H. Ernst (US Army - Retired), George Clinton, and E.E. Haskell.

<sup>54</sup> Reporting to three governments is technically more accurate, since Canada's foreign affairs were still controlled by the British. The IWC's functions are detailed in their first progress report, see: International Waterways Commission, *Progress Report, 1905* (Ottawa: His Majesty's Printer, 1905), 3-7.

addressing each case *sui generis* resulted in an endless series of special commissions and inevitably favored the stronger power – in this case, the United States. He persuaded his American counterparts to support the establishment of general principles as well as an expansion of the Commission’s jurisdiction. Gibbons further advocated a diplomatic rearrangement to allow Canada and the United States to settle future boundary questions *tête-à-tête*, thereby avoiding the tortuous path through the British Foreign Office.

He laid out his case for general principles and increased authority in a letter to George Clinton, an American colleague on the IWC.<sup>55</sup> The American delegation desired to independently resolve disagreements surrounding the increased diversion of water at Niagara Falls, central to the production of hydroelectricity, but Gibbons refused to consider it outside a holistic context of boundary water disputes. Despite American hesitation to establish general principles, the Commission’s report included a general, unreserved endorsement of establishing general principles.<sup>56</sup>

It also called for the creation of a more powerful commission or an expansion of the IWC’s mandate and regulatory authority.<sup>57</sup> The IWC most explicitly laid out its case for increased, objective, and bi-national authority in a report published in January 1907. Here, the IWC recommended that Canada and the United States enter a treaty agreement

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<sup>55</sup> George Gibbons to George Clinton, April 6, 1906, LAC, *George Christie Gibbons fonds*, MG30-E71, Letters Received, Vol.5, “General Correspondence, 1902-1907” (Emphasis mine).

<sup>56</sup> International Waterways Commission, *Joint Report of the International Waterways Commission, November 15, 1906* (Ottawa: His Majesty’s Printer, 1907), 6-7.

<sup>57</sup> It expressed the need to form a new commission or to expand its authority in: International Waterways Commission, *Second Report, 1906, Vol.II* (Ottawa: His Majesty’s Printer, 1906), 104, 112. Moreover, in its report on indiscriminate obstructions and diversions at Sault Saint Marie, the Commission suggested – “that a joint commission be created to supervise their enforcement.” This is found in their fifth recommendation. International Waterways Commission, *Second Report, 1906, Vol.I* (Ottawa: His Majesty’s Printer, 1906), 14-15. Finally, in another report, on fixing the location of the boundary line through Lake Erie, the Commission recommended that the border be delineated “under the direction of this Commission or another international Commission to be appointed.” International Waterways Commission, *Third Report, 1907, Vol.II* (Ottawa: His Majesty’s Printer, 1907), 234.

to codify general “rules and principles,” under which future issues could be resolved. It also recommended prohibiting unilateral diversion of transboundary waters, and delineating the appropriate uses of these waters. In order of importance it suggested these uses to be:

- a) Use for necessary domestic and sanitary purposes
- b) Service of locks used for navigation purposes
- c) The right to navigate...<sup>58</sup>

This recommendation articulated specific criteria under which Canadian-American environmental diplomacy continues to operate. It advocated the negotiation of a treaty to buttress the proposed commission’s authority and the establishment of pre-determined principles that carried permanent statutory power. The most interesting aspect is the proposed hierarchy of boundary water uses, privileging sanitary and transportation uses over others. Hierarchies of use and pre-determined rules enforced by regulatory authority correspond with the ideals of the conservation movement. Finally, to address the inimical issue of diversion, the recommendation suggested prohibition unless approved by a *permanent* joint commission. Through these suggestions the commissioners sought to rectify self-identified shortcomings in their mandate. The IWC’s institutional successor – the IJC – addressed their concerns and exceeded their expectations.

#### *Transportation Concerns and the Reinvigoration of the Seaway Debate*

At the turn of the century, enthusiasm for Canadian-American cooperative action along the boundary waters ebbed, and was replaced by a series of proposals advocating unilateral alternatives. Prime Minister Wilfrid Laurier argued for Canadian vigilance in

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<sup>58</sup> This report is dated January 7, 1907. International Waterways Commission, *Third Report, 1907, Vol.II* (Ottawa: His Majesty’s Printer, 1907), 234.

safeguarding its interests, claiming: “the best and most effective way to maintain friendship with our American neighbors is to be absolutely independent of them.”<sup>59</sup>

In March of 1903, Laurier announced the establishment of a Royal Commission to prepare a comprehensive plan for the development of Canada’s waterway system.<sup>60</sup> Almost simultaneously, the Laurier government endorsed and committed itself to partially financing a second transcontinental railroad with seaports on both the Atlantic and Pacific coasts.<sup>61</sup> Laurier’s Conservative political opponents thought this plan hastily and ill conceived. Instead, they argued, the government should focus on the improvement of the St. Lawrence and Welland Canals, and deepening the shipping channel below Montreal.<sup>62</sup>

These criticisms did not deter the Liberal government from their transcontinental railroad project; Laurier argued it was a “national as well as a commercial necessity,” and an important measure to prevent the diversion of Canadian products to American transportation channels.<sup>63</sup> The railroad bill became law in August 1903, inaugurating a new transportation policy based on the proliferation of transcontinental railroad routes, not increased waterway development. However, the following year, the Liberal government demonstrated the scope of its transportation ambitions and allocated \$250,000 for a survey and cost estimate of the Georgian Bay Deep Waterway project.

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<sup>59</sup> Canada, Parliament, House of Commons, *Debates*, 9 Parliament, 3 Session, Vol.61, No.4 (July 30, 1903), 7675.

<sup>60</sup> Under the direction of Robert Redford of Montreal, see: J. Castell Hopkins, *The Canadian Annual Review of Public Affairs, 1903* (Toronto: The Annual Review Publishing Company, 1904), 431.

<sup>61</sup> The plan called on the Grand Trunk Railway Company, with the aid of government guarantees, to build a new line west from Winnipeg to the Pacific, and for the national government to build a new line from Winnipeg to the port of Quebec City, and from there across the St. Lawrence to Moncton, NB, where connections existed to the year-round ports of Halifax and St. John. The Grand Trunk Railway Company would lease this line from the government and pay a rent based on the cost of construction. See: Willoughby, *The St. Lawrence Waterway*, 69-70.

<sup>62</sup> For the Conservative Party’s objections see: Canada, Parliament, House of Commons, *Debates*, 9 Parliament, 3 Session, Vol.61, No.4 (July 30, 1903), 7719, 8527, 8546.

<sup>63</sup> *Ibid.*, 7659.

An all-Canadian alternative to the St. Lawrence route, the Georgian Bay project proposed cutting a deep waterway channel across Ontario from Lake Huron to the Ottawa River. Additionally, the Dominion government took control of Montreal's harbor from local commissioners and placed it under the direction of federally appointed commissioners. It also authorized a loan of \$3 million to complete the port's terminal facilities, and deployed eight dredges to deepen the channel from Montreal to Quebec to 30 feet – a task completed in September 1907.<sup>64</sup>

The Liberal government's expansive efforts did not keep pace with the growth of trade and western agricultural production. In 1906, Canadian wheat production crossed the threshold of 100 million bushels, compared to 42 million bushels in 1890. Railcar shortages and inadequate storage facilities led to major spoilage losses for western farmers, and coupled with widely perceived predatory railroad and grain elevator rates, agitation arose across Canada for expanded and upgraded transportation facilities.<sup>65</sup>

On the 1908 campaign trail, Laurier boldly pronounced that his government, if returned to office, would not only complete the second transcontinental railway and continue to improve Montreal's and Great Lakes harbors, but also construct a railroad to Hudson Bay, deepen the Welland Canal to 25 feet, and construct a Georgian Bay Canal. Transportation questions played a central role in the campaign, and the electorate returned the Liberals to power with a reduced majority. Fortunately for the Liberals, economic downturn in 1909-1910 saved them from the embarrassment of trying to fulfill

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<sup>64</sup> Willoughby, *The St. Lawrence Waterway*, 71 (figures in \$ CDN)

<sup>65</sup> For example, Saskatchewan's farmers lost an estimated \$1.25 million on the 1906 crop alone. J. Castell Hopkins, *The Canadian Annual Review of Public Affairs, 1907* (Toronto: The Annual Review Publishing Company, 1908), 94-95. For the 42 million bushel figure from 1890, see: J. Castell Hopkins, *The Canadian Annual Review of Public Affairs, 1905* (Toronto: The Annual Review Publishing Company, 1906), 78.

all their grandiose campaign promises. However, the government continued construction on the transcontinental, started work on the Hudson Bay Railway, financed the overhaul of a number of harbors, and began dredging and blasting operations in the St. Lawrence between Kingston and Brockville, ON.<sup>66</sup> The simultaneous deepening of the Welland and construction of the Georgian Bay Canal seemed irreconcilable, since they would directly compete for freight; consequently, the government did not pursue either. Despite this inertia, use of the existing 14 St. Lawrence canals grew considerably. In 1902, 1,093,133 tons of freight passed through the canals, by 1909 that figure surged to 2,410,629 tons – an increase of over 120 percent.<sup>67</sup> This increase buttressed arguments favoring St. Lawrence canal expansion. Designed for the largest lake ships of the 1870s, the 14-foot canals did not accommodate the drafts or dimensions of early 20<sup>th</sup> century vessels, which typically drew at least twenty-feet of water.

South of the border, interest in waterway development – though not the St. Lawrence – continued unabated. Harold Moulton, an economist at the University of Chicago, founder and inaugural president of the Brookings Institution, and author of *Waterways Versus Railways* (1914), claimed that American interest in rivers and canals reached its zenith in the first decade of the 20<sup>th</sup> century. Americans wrote and spoke about waterways with unprecedented intensity, they formed civic associations to advocate their expansion, and persuaded Congress to allocate millions of dollars for their development.<sup>68</sup>

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<sup>66</sup> Willoughby, *The St. Lawrence Waterway*. 72.

<sup>67</sup> The 1902 figure is taken from: Canada, Department of Railways and Canals, *The Annual Report of the Department of Railways and Canals, 1902-1903* (Ottawa: His Majesty's Printer, 1904), v, 8; the 1909 figure is taken from: Canada, The Department of Railways and Canals, *The Annual Report of the Department of Railways and Canals, 1910* (Ottawa: His Majesty's Printer, 1911), xxiii.

<sup>68</sup> A partial list of some of these associations can be found in: Harold G. Moulton, *Waterways Versus Railways* (New York: Houghton Mifflin Company, 1914), 4-5.

One reason for this enthusiasm was a widespread belief in the economic advantages of water over rail transportation, and waterways' ancillary role as a regulator of railroad rates.<sup>69</sup> President Theodore Roosevelt expressed this conviction: "Wherever a navigable river runs beside railroads the problem of regulating the rates on railroads becomes far easier, because *river regulation is rate regulation*."<sup>70</sup> The notion of regulating the railroads' perceived avariciousness through river development widely resonated across the American populace.

In *The Best Transportation System in the World*, historians Mark Rose, Bruce Seely, and Paul Barrett argue that following 1870, most Americans and their political leaders resented the enormous economic and political influence of the railroads, creating a popular discourse that cast these enterprises as "dangerous monopolies threatening American democracy."<sup>71</sup> Rose, Seely, and Barrett demonstrate this discourse's influence with the creation of the Interstate Commerce Commission (ICC), empowered in 1887 to regulate railroads at the federal level. According to these scholars, the ICC struggled for more than a decade to carry out its mandate; but in 1906 and 1910, under the Hepburn and Mann-Elkins Acts, Congress extended the ICC's authority over railroad rates and operations.<sup>72</sup> Regulating the railroads formed part of a broader federal transportation agenda to construct national transportation markets, and many believed that waterways

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<sup>69</sup> For example, Congressman Joseph Ransdell (D-LA) claimed at a waterways convention that – "waterway transportation in this country, under favorable conditions, costs only about a sixth as much as the average cost by rail." Joseph E. Ransdell, "Legislative Program Congress Should Adopt for Improvement of American Waterways," *The Annals of the American Academy of Political and Social Science*, Vol.31 (January 1908), 39. Also see: Willoughby, *The St. Lawrence Waterway*, 73.

<sup>70</sup> Theodore Roosevelt in an address to the Deep Waterway Convention at Memphis, Oct. 4, 1907, in: Joseph E. Ransdell, "Legislative Program Congress Should Adopt for Improvement of American Waterways," *The Annals of the American Academy of Political and Social Science*, Vol.31 (January, 1908), 3 (Emphasis added).

<sup>71</sup> Mark H. Rose, Bruce E. Seely, and Paul F. Barrett, *The Best Transportation System in the World: Railroads, Trucks, Airlines, and American Public Policy in the Twentieth Century* (Columbus, OH: The Ohio State University Press, 2006), 2.

<sup>72</sup> *Ibid.*, 3.

could provide a benchmark for rate regulation. Despite claims to the contrary, Rose, Seely, and Barrett demonstrate that no comprehensive national transportation policy was ever accomplished. Instead, Roosevelt and Congress produced a fractured system of various non-integrated modalities insulated from one another.<sup>73</sup>

In addition to widespread dissatisfaction with railroad rates and influence, by 1906, boxcar shortages and congestion also contributed to waterway enthusiasm. The railroad magnate, James J. Hill estimated that it would require 73,333 miles of additional track and \$5.5 billion to relieve this situation.<sup>74</sup> In Roosevelt's assessment, it was "common knowledge that the railroads... are no longer able to move crops and manufactures rapidly enough to secure the prompt transaction of the business of the nation...there appears to be but one complete remedy – the development of a complementary system of waterway transportation."<sup>75</sup> Finally, waterway advocacy continued to draw strength from the conservation movement. With endorsements from prominent conservationists like Roosevelt, Gifford Pinchot, and Francis G. Newland, the development of waterways folded into a general conservation program. Conservationists saw the untapped potential of waterways, an observation axiomatic to their mission of promoting efficiency and eliminating waste. They believed that waterway development would help purify domestic water supplies, prevent loss of life and property to flooding, and produce large amounts of hydroelectricity whose anticipated revenues would fund concurrent development of navigation facilities.

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<sup>73</sup> Ibid., xxi, 2.

<sup>74</sup> Quoted in: R.B. Way, "Mississippi Improvements and Traffic Prospects," *The Annals of the American Academy of Political and Social Science*, Vol.31 (January, 1908), 162.

<sup>75</sup> Quoted in: United States, Congress, Senate, Inland Waterways Commission, *The Preliminary Report of the Inland Waterways Commission*, Senate Document 325, 60 Congress, 1 Session (February 26, 1908), 16.

Without the short-lived IDWA, no organized group existed to harness this enthusiasm and direct attention to the Great Lakes and St. Lawrence. Great Lakes congressional representatives succeed in obtaining limited appropriations to update the locks and channels on the Detroit River and at Sault St. Marie, but did not advance a comprehensive plan for Great Lakes-St. Lawrence development.<sup>76</sup> Without an organized Seaway agenda, Midwesterners pinned their hopes on the expansion of the Erie, under slow and onerous development, or on the construction of a 14-foot canal linking the Great Lakes to the Mississippi by way of the Illinois River.

This Mississippi alternative gained traction in 1906 with the formation of the Lakes-to-Gulf Deep Waterway Association (LGDWA). Through a concerted propaganda campaign they drew support to their cause. For example, both Presidents Roosevelt and Taft endorsed the project and Congress authorized several surveys to determine its feasibility and cost.<sup>77</sup> Proponents argued that the construction of this proposed 14-foot waterway would provide an outlet for the country's most important agricultural region and its manufactured goods. Moreover, Chicago had already spent upwards of \$60 million on its Sanitary Canal, which would constitute an important part of the proposed waterway, and the State of Illinois had appropriated \$20 million to cover other essential costs for the undertaking. Surely, the LGDWA argued, Congress could authorize an

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<sup>76</sup> For example, the Rivers and Harbors Act of 1907 appropriated \$2 million for the Detroit River, and \$1.2 million for the construction of a third lock with a separate canal at Sault St. Marie – See: United States, Congress, House of Representatives, *Laws of the United States Relating to Improvements of Rivers and Harbors*, House Document 1491, 62 Congress, 3 Session, Vol.1 (August 12, 1913), 1253.

<sup>77</sup> Roosevelt support is claimed in: Joseph E. Ransdell, "Legislative Program Congress Should Adopt for Improvement of American Waterways," 2. Taft's support is indicated in: William H. Taft, *A Compilation of the Messages and Papers of the President*, Vol.15, James D. Richardson, ed. (New York: Bureau of National Literature, 1917), 7465. Congress authorized funds in the Rivers and Harbors Act of March 2, 1907, see: United States, Congress, House of Representatives, *Laws of the United States Relating to Improvements of Rivers and Harbors*, House Document 1491, 62 Congress, 3 Session, Vol.1 (August 12, 1913), 1262-63.

additional \$10 million per year over a decade to complete a project with such self-evident national value.<sup>78</sup>

In spite of the support they accumulated, proponents of this north-south waterway also confronted immense difficulties. A cooperative agreement between Illinois and the federal government proved illusive. Canada raised serious legal objections to increased division of Great Lakes water – they already strenuously objected to the diversion of 25,000 cfs needed for a nine-foot waterway. Finally, the north-south orientation of the project potentially benefited commerce with the southern hemisphere but not with Europe, the principal foreign destination for Midwestern products. A highly unfavorable Army Corps report that stressed the high cost of construction and maintenance sounded the project's death knell in 1909.<sup>79</sup> In the end, the federal government shelved the Lakes-to-Gulf 14-foot waterway. Illinois continued to work on a nine-foot channel from Chicago to Utica, IL along the Illinois River, and the Corps maintained a six-foot channel from Utica to the Gulf.

#### *Negotiating the Boundary Waters Treaty 1907-1909*

Clearly a highly contested space, the debate surrounding the cooperative management of the boundary waters provided discursive space for the resolution of a variety of outstanding Canadian-American disputes and for the creation of the most significant institution in Canadian-American conservation diplomacy – the IJC.

The IWC's recommendations triggered a series of Treaty negotiations beginning in 1907. This dialogue aimed to resolve the most pernicious boundary water disputes and

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<sup>78</sup> Willoughby, *The St. Lawrence Waterway*, 75.

<sup>79</sup> United States, Congress, House of Representatives, Army Corps of Engineers, *Report of Survey of Mississippi River*, House Document 50, 61 Congress, 1 Session, Vol.1 (June 9, 1909), 5, 24-26.

enshrine diplomatic mechanisms for the peaceful, objective resolution of future issues.<sup>80</sup>

There has been a substantial amount of scholarly attention directed toward the amicability that characterized the relationship between the principal negotiators – British Ambassador James Bryce and Secretary of State Elihu Root.<sup>81</sup> These diplomats negotiated the Boundary Waters Treaty, an Inland Fisheries Treaty, a more complete demarcation of the transcontinental boundary line, as well as an agreement to submit outstanding pecuniary claims to arbitration.<sup>82</sup> Bryce’s arrival as ambassador is considered the high-water mark in the great Anglo-American *rapprochement*.<sup>83</sup> However, as we shall see, the mechanics and substance of this “special relationship” initially faced criticism from their colleagues.

The delegations’ composition reflects the influence of the conservation movement and the centrality of the IWC to treaty negotiations. The British/Canadian delegation included two IWC commissioners, George Gibbons and William F. King, and the American delegation exhibited its conservation *bona fides* with the inclusion of Frederick G. Newell. Newell served as the director of the Bureau of Reclamation and a member of the Inland Waterways Commission, which President Roosevelt tasked with an explicitly

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<sup>80</sup> The key American protagonists in the negotiations were: Elihu Root (Roosevelt’s Secretary of State), Chandler Anderson (Legal Advisor the State Department) and Frederick Newell (first director of the Bureau of Reclamation and member of the Inland Waterways Commission). Their British/Canadian counterparts consisted of: James Bryce (British Ambassador to the United States), William Pugsley (Canadian Minister of Public Works), William F. King (member of the IWC and several commissions reviewing the international boundaries), and George Gibbons (Canadian Chairman of the IWC).

<sup>81</sup> For a typical description of this relationship see: John Herd Thompson and Stephen J. Randall, *Canada and the United States: Ambivalent Allies*, 71-78.

<sup>82</sup> The “pecuniary agreement” was actually negotiated between Bryce and Root’s successor – Philander Knox. Kirkpatrick Dorsey devotes a great deal of attention to the special relationship between Bryce and Root, with regards to Inland Fisheries: Dorsey, *The Dawn of Conservation Diplomacy*, 59-63.

<sup>83</sup> For an example, see Kirkpatrick Dorsey’s characterization of the Bryce-Root relationship with respect to both the Boundary Waters and Inland Fisheries Treaties: *Ibid.*, 8-9, 59-63.

conservationist mission to “comprehensively plan for the improvement and control of the river systems of the United States.”<sup>84</sup>

Little has been written about the actual substance of the negotiations, which lasted nearly two years.<sup>85</sup> However, George Gibbons seems to have been the driving force behind the Treaty’s conclusion. The negotiations began when Prime Minister Laurier dispatched Gibbons to Washington, in January 1907, to explore the possibility of reaching a bilateral agreement premised on the IWC’s recommendations. On this trip, Gibbons met with two key figures: Secretary of State Root and the Secretary of War William Howard Taft. His initial impressions were positive toward Taft and negative toward Root.<sup>86</sup> Gibbons’ surprisingly negative assessment of Root derived from his belief that: “Root is the shrewd American who wants all he can get without being particular about the manner of getting.”<sup>87</sup> The Secretary of State’s intransigence over the next several months reinforced Gibbons’ initial assessment. However, in May of 1907, the Canadian and American governments instructed Gibbons and George Clinton, one of the American IWC delegates, to meet and draft a treaty along the lines of the IWC’s recommendations.

The first draft treaty was not accepted. In fact, it was unsympathetically received in Washington. Contrary to the general principles contained in the draft treaty, Secretary

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<sup>84</sup> United States, Congress, Senate, Inland Waterways Commission, *The Preliminary Report of the Inland Waterways Commission*, Senate Document 325, 60 Congress, 1 Session (February 26, 1908), 15.

<sup>85</sup> Even the only monograph about the IJC – Chacko’s *The International Joint Commission* – says virtually nothing about the negotiation process. The only secondary literature that exists on this subject is: Alan O. Gibbons, “Sir George Gibbons and the Boundary Waters Treaty of 1909,” *Canadian Historical Review*, Vol.34, No.2 (June, 1953), 124-138.

<sup>86</sup> Gibbons wrote Laurier in a letter dated February 15, 1907: “I formed a very favourable impression of Secretary Taft and a very unfavourable impression of Secretary Root.” Gibbons to Laurier, February 15, 1907, LAC, *George Christie Gibbons fonds*, MG30-E71, Letterbook No.1, Vol.8, No.17-18, “Niagara Diversion.”

<sup>87</sup> By contrast, his favorable impression of Taft came from their agreement that – “there should be a permanent Commission, that would establish principles applicable everywhere... the jurisdiction of the Commission [IWC] should be extended, [and]... made permanent.” Quoted from: *Ibid*.

Root insisted on the establishment of special commissions to deal with boundary water conflicts *du jour*. Gibbons' correspondence reveals continued frustration with Root, but interestingly, his assessment of Bryce was equally unfavorable.<sup>88</sup> Gibbons surmised that Root outmatched Bryce in the negotiations and his comments reflected a general frustration with the Canadian position *vis-à-vis* the British. Accordingly, he wrote: "Canadians have to meet Americans directly and not through the intervention of Englishmen."<sup>89</sup>

After trading several drafts, Elihu Root and James Bryce exchanged signatures in early 1909, informally approving the Boundary Waters Treaty, colloquially known as the Root-Bryce Treaty. When the Treaty ran into trouble in the Senate, threatening to quash the whole process, the American executive branch enlisted Gibbons to provide advice on what tactics would ensure its passage.<sup>90</sup> Evidently, these tactics worked, and on March 3, 1909, the Senate consented to the President's ratification of the Treaty.<sup>91</sup> An official exchange of ratifications took place on May 5, 1910, and the Boundary Waters Treaty of 1909 became the law of two lands and their shared inland waters.

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<sup>88</sup> On the subject of Bryce, Gibbons wrote: "Mr. Bryce is of no assistance but, in my opinion, an obstruction to obtaining what ought to be insisted upon, a permanent Commission." See: Gibbons to Laurier, December 16, 1907, LAC, *George Christie Gibbons fonds*, MG30-E71, Letterbook No.1, Vol.8, No.285-290, "Visit to Washington – Comments on Bryce, Root, Taft, and Burton – Situation Critical."

<sup>89</sup> Gibbons to Laurier, January 8, 1908, LAC, *George Christie Gibbons fonds*, MG30-E71, Letterbook No.1, Vol.8, No.308-309, "Repeats Gibbons will Tackle Root Himself."

<sup>90</sup> The trouble the agreement faced in the Senate was a rider introduced by Senator William Smith (R-MI) that would give the United States an advantage in potential hydroelectric power development at Sault St. Marie through the preservation of existing riparian rights. For Gibbons' assessment of the situation see: Gibbons to Laurier, April 14, 1909, LAC, *George Christie Gibbons fonds*, MG30-E71, Letterbook No.1, Vol.8, No.665-666, "Reporting on Root's Opinion." It should be recognized that it was Laurier who threatened to quash the process once the rider was adopted, saying – "if I were to follow my own inclination at the present time, we would decline the Treaty." See: Laurier to Gibbons, April 20, 1909, LAC, *George Christie Gibbons fonds*, MG30-E71, Letters Received, Vol.6, No.7, "General Correspondence, 1909-1910." Ultimately, Laurier's concerns were assuaged and the rider had no legal force across the border and did not impede ratification.

<sup>91</sup> Chacko, *The International Joint Commission*, 78.

Obviously, the Boundary Waters Treaty did not resolve disputes along the boundary waters in perpetuity, but it created a mechanism for their future resolution based on two overarching propositions. First, derived from a conservationist impetus, it established a set of predetermined principles to govern the uses of the boundary waters. The combination of “objective” scientific-technological expertise and bi-national authority attended to these principles, providing space for experts to identify and mitigate problems as they arose. Second, the Treaty provided a permanent institutional venue where Canadians and Americans could directly confront one another directly, outside the normal channels of British diplomacy.

Enshrined by the Treaty, these two propositions enshrined the diplomatic terms on which an emergent transboundary envirotechnical regime was predicated. The transnational institutional infrastructure central to the joint construction and operation of the Seaway had been developing since 1892, but under the auspices of the Boundary Waters Treaty, Canada and the United States legally instated a bi-national management structure to collaboratively govern envirotechnical systems interspersed along the boundary waters. The Treaty offered diplomatic and institutional space for the consolidation of separate but overlapping envirotechnical regimes across the national border. It is important not to conflate the IJC with the regime; it is a component not the sum. However, it helped to entrench and normalize conservationist discourses and practices, established predetermined principles to govern uses and resolve disputes, empowered new actors, and revised transboundary dynamics. In short, the Boundary Waters Treaty marked a watershed moment in boundary water management because it

formalized a reconfiguration the manner in which Canada and the United States approached one another and the shared aquatic spaces between them.

*The International Joint Commission and the Boundary Waters Treaty*

Of the Boundary Waters Treaty's fourteen articles, the most important for our purposes is Article VII, which established "an International Joint Commission of the United States and Canada" composed of six commissioners, three from the United States, and three from Canada.<sup>92</sup>

The IJC departed from previous river commissions, such as the Central Commission on the Rhine (1815) and the European Commission on the Danube (1856), because these earlier organizations played an exclusively administrative role to safeguard international navigation on the Rhine and Danube, respectively.<sup>93</sup> The IJC, on the other hand, has a much broader mandate. Analogous to these earlier commissions, Article I of the Treaty guarantees the perpetual and free navigation of all navigable boundary waters, Lake Michigan, and all the canals connecting them; and Article VI invests the IJC with the administrative power to oversee the diversion and apportionment of water on the St. Marys and Milk Rivers.<sup>94</sup> However, the remaining Articles grant the IJC considerably more power. For example, Articles II and V delineate predetermined rules negotiated for the diversion of boundary waters. Article II describes the legal recourse given to each party in the case of injurious diversion, especially with respect to navigation; and Article

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<sup>92</sup> The text of the Boundary Waters Treaty of 1909 can be found in Appendix A of: Chacko, *The International Joint Commission*, 381-394. This specific quote is taken from page 386.

<sup>93</sup> Mark Cioc argued that Rhine Commission had considerable power *because* it was advisory and voluntary. However, in terms of political, judicial, and administrative power, as well as the scope of their mandate, the International Joint Commission diverged from these earlier models. See: Mark Cioc, *The Rhine: An Eco-Biography* (Seattle: University of Washington Press, 2006). Also see: Chacko, *The International Joint Commission*, 24-25.

<sup>94</sup> The St. Mary and Milk Rivers traverse the borders between Montana, Alberta and Saskatchewan. Chacko, *The International Joint Commission*, 382-383, 386.

V set fixed limits on diversion at Niagara Falls for the purposes of power production (New York receives 20,000 cfs and Ontario receives 36,000 cfs).<sup>95</sup>

The IJC's mandate can usefully be categorized into three primary functions – administrative, judicial, and investigative. Article VI defines the IJC's administrative powers, Articles III, IV, VIII, and X describe its judicial powers, and Article IX defines its investigative authority.<sup>96</sup> Unlike earlier river commissions, the IJC has powers of judicial arbitration, and enshrined the IWC's recommendation to establish a hierarchy of boundary water uses:

- 1) Uses for domestic and sanitary purposes
- 2) Uses for navigation, including the service of canals for the purposes of navigation
- 3) Uses for power and for irrigation purposes<sup>97</sup>

The inclusion of “uses for power and irrigation purposes,” absent in the IWC recommendation, reflects the amplified importance of power in the Great Lakes-St. Lawrence basin. Enumerating and prioritizing the several uses of these waters gave the IJC direction on how to make judgments on cases falling its jurisdiction. Article X gives the IJC its most substantial judicial power – it invests the Commission with the power of an arbitral tribunal.<sup>98</sup>

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<sup>95</sup> Ibid., 383, 385.

<sup>96</sup> The remaining Articles XI-XIV delineate the immediate organization of the IJC, the scope of some of its judicial powers, the procedure for ratification and promulgation of the Treaty, and place of concurrent, and how to treat concurrent legislation in the United States and Canada. See: Ibid., 390-392.

<sup>97</sup> The inclusion of power can be specifically attributed to the growing importance of electricity production at Niagara Falls. Ibid., 387.

<sup>98</sup> However, because Article X has never been invoked its actual operation and jurisdictional scope remains untested. To reinforce these judicial powers, IJC commissioners have the power to administer oaths to witnesses, take evidence under oath, and issue subpoenas to compel testimony. These subpoena powers were contingent on the passage of legislation by both Canada and the United States granting them to the IJC (Ibid., 391). This happened with the adoption of the IJC's “Rules and Procedures” on February 2, 1912, see: Ibid., 395-404; and: International Joint Commission, *Rules of Procedure of the International Joint Commission*, February 2, 1912 (Washington, DC: The Commission, 1912).

The final function of the IJC is investigative (Article IX); unquestionably, this is the IJC's most commonly invoked function. Like the terms of the IWC and other *ad hoc* special commissions, the investigative function of the IJC is advisory and not legally binding. However, it is a permanent piece of diplomatic machinery established to report on jointly referred boundary issues. When both national governments agree to specific terms of investigative reference, the Commission is tasked to "examine into and report upon the facts and circumstances of the particular questions and matters referred, together with such conclusions and recommendations as may be appropriate."<sup>99</sup> Although their conclusions lack force of law, following an IJC investigation the commissioners submit a joint report to their respective governments to furnish data and make recommendations.<sup>100</sup>

Historian Chirakaikaran Joseph Chacko claimed that "not one single commission in this entire galaxy is clothed with that aggregate of powers which is delegated to the International Joint Commission... this is a remarkable combination to perpetuate peace."<sup>101</sup> Although this statement is clearly hyperbolic, the IJC is quite remarkable, not only for its power, but also for its longevity and symbolic potency. Moreover, like its *ad hoc* predecessors, the influence of the conservation movement is evident in the IJC's mandate and operation.

The IJC succeeded where other contemporary efforts in conservation diplomacy failed. As already noted, the Inland Fisheries Treaty failed because people lacked an aesthetic attachment to fish and viewed them as commodities not wildlife in need of

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<sup>99</sup> Text of Article IX, see: Chacko, *The International Joint Commission*, 388-389.

<sup>100</sup> If the two national delegations disagree in their recommendations, they would submit two separate reports to their respective national governments, outlining their position and the position of their counterparts, see the fourth paragraph of the Article: *Ibid.*, 389.

<sup>101</sup> *Ibid.*, 40.

protection. Kurkpatrick Dorsey argued that Congress tacitly endorsed the maximization of short-term gains at a neighboring nation's expense.<sup>102</sup> The Boundary Waters Treaty tells a very different story; in part, because the negotiations addressed aesthetic arguments to preserving Niagara Falls' scenic beauty.<sup>103</sup> However, the aesthetic argument was a thin veil for equitable diversion of its waters to produce hydroelectric power. The Treaty's text shows concern with utility and resource conservation, not aesthetics, and its conservationist progenitors often deployed scenic arguments in service of utilitarian goals. In later debates regarding the hydroelectric development of the Long Sault Rapids, local communities invoked preservationist arguments for aesthetic and experiential reasons, but the boundary waters' aesthetic and recreational value was conspicuously absent from the Treaty negotiators' considerations.

Aesthetic considerations aside, the representatives from Canada and the United States set aside short-term economic interests in favor of establishing predetermined and shared principles governing use, and an institution to enforce them. According to Dorsey, the failure of the 1908 Inland Fisheries Treaty meant the Boundary Waters Treaty "was the first successful conservation accord."<sup>104</sup>

The IJC also represents an important departure from the normal operation of Canadian-American diplomacy. The IJC effectively removed the British Foreign Office from the dialogue about the management of boundary resources. It reflects Canada's increasing appetite for more control over its foreign affairs, as well as the fatigue of

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<sup>102</sup> Dorsey, *The Dawn of Conservation Diplomacy*. 20-21.

<sup>103</sup> During the negotiations, there was some concern indicated on behalf of the American contingent that increased diversions by Canadian power concerns at Niagara Falls would impair the Falls' scenic beauty; however, it seems this also served as a tactic to ensure that American interests would get an equitable share of any increased diversion for their own efforts to produce hydroelectric power.

<sup>104</sup> *Ibid.*, 8-9.

British diplomats who constantly dealt with Canadian-American specific issues. The Boundary Waters Treaty legitimated concurrent legislation as the *de facto* means of enacting shared regulation to manage boundary waters.<sup>105</sup> This facilitated cooperative action between Canada and the United States by circumventing the need for continuous Anglo-American treaty arrangements, and avoided higher legislative thresholds for ratification. In short, the conclusion of this agreement institutionalized conservationist ideas about the management of boundary resources and provided a venue to expedite the interactions between the two nations who shared them.

Although the Treaty did not specifically mention the Seaway idea, its ratification had momentous implications for the scheme. Under the Treaty's terms, the IJC had to approve the necessary diversions to supply canals with water and produce power at corresponding hydroelectric works. The Treaty also placed navigation in the second order of uses and invested the IJC with the investigative authority to determine the Seaway's benefits, costs, and the most efficacious arrangement of its components. Most importantly, it provided Seaway advocates with institutional machinery to advance their agenda under the cover of dispassionate expertise. As I will show in the next chapter, the IJC's interaction with the Seaway idea continually blurred the lines between expertise and advocacy. The Commission's bi-national composition and its deployment of scientific and technological expertise to evaluate the boundary waters engendered an appearance of objectivity that eschewed national or political considerations. But the

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<sup>105</sup> Article XII of the treaty stipulates that any "special agreements" referred to in the Treaty should include not only agreements between the High Contracting Parties (Britain and the United States) but also concurrent legislation enacted by Canada and the United States, see: Chacko, *The International Joint Commission*, 391.

IJC's recommendations are profoundly political acts, based on contingent assumptions about utility, for whom, and to what end.

This chapter focused on bi-national institutional consolidation within an emerging envirotechnical regime that structured the terms, discourses, and institutions for the imposition of envirotechnical systems along the boundary waters. The regime appropriated Progressive, conservationist principles focused on utility, efficiency and the elimination of waste in the exploitation of natural resources. This appropriation provided epistemic authority to determine "appropriate" uses of the boundary waters. In many ways, this chapter centered on a diplomatic story and described the construction of a transnational bureaucratic order and attendant vision, which saw the natural world in terms of economic potential. Outside Washington and Ottawa, I traced the story of an advocacy organization that sought to delineate and mobilize contested environments to specific political and economic ends. The hymn set out at the beginning seems a bit out of place by the end. The Seaway idea's language began to transform from hymns about nature's perfectibility to a dialogue that stressed bi-national economic and political imperatives. A shared sense of resource conservation urgency helped to inaugurate diplomatic mechanisms to efficiently share resources and normalize certain practices across shared spaces. As the language of Seaway discourse changed, so did the terms of the relationship between Canada and the United States. Diplomatic arrangements shaped the character and composition of the Seaway system by establishing transboundary institutions to govern it; however, envirotechnical systems are not built in Congress, Parliament, or even the offices of the IJC, but in specific environmental contexts. The following chapter explores 'on the ground' interactions with the river and people found in

the International Rapids Section, the expansion of the Seaway idea to include a hydroelectric future, and the mobilization of a second generation of advocates.

### Chapter Three

## *HYDRO-POWERS*

“No man can determine the serious consequences which might result from introducing these artificial dams in the narrow portions of the river... Nature asserts herself with irresistible force when the struggle between water and ice takes place in so mighty a river as the St. Lawrence.”

– H. T. Barnes, McGill University (1913)

The signing of the Boundary Waters Treaty and establishment of the IJC helped to reinvigorate a fractured Seaway advocacy movement. However, a proposal to privately develop the hydroelectric power potential of the St. Lawrence’s Long Sault Rapids directly remobilized advocates. The ensuing debate united a group of individuals who sought to expand the Great Lakes-St. Lawrence’s navigation facilities, while concurrently exploiting its hydroelectric power potential.

This chapter describes a confrontation between “irresistible forces” – the power of the river versus the transformative energies of capital, technology, and institutions operating under the rubric of modernization. It is about the discursive mobilization of an assortment of *hydro-powers*: the power of the river’s current and unpredictability of its ice, especially where the river narrows at the International Rapids, and the portions of this kinetic energy that public and private planners sought to convert into hydroelectricity; the political and epistemic power of hydro-institutions, like the IWC and IJC, which structured and legitimated discourse and action; the river’s symbolic and aesthetic powers that served to entangle and complicate preservation and conservation objectives; and finally, the limited power of local communities in the face of the development schemes they confronted.

Here, I look at the circumstances surrounding the recently established bi-national management regime’s first specific interaction with the St. Lawrence River. I explore the

proliferation of boundary water uses and, at the same time, how a changing envirotechnical regime began to tacitly delegitimize certain uses. I specifically focus on the Aluminum Company of America's (Alcoa) plans to radically transform the International Rapids to an electrified end. However, the river's tendency to freeze, local objections, nationalistic and provincial concerns, and advocates of competing uses thwarted Alcoa's plans. Despite this array of opposition, the exigencies of the First World War revised the matrix of considerations and compelled limited hydroelectric development at the Long Sault. I interrogate the boundaries between advocacy and expertise, transgressed in the entangled relationship between Seaway advocates and the IJC. Here, the distinctions between groups of actors are not easily parsed. Finally, I explore an early example of a persistent disconnect found between the abstract designs of planners and advocates on one hand, and tactile knowledge embodied in local communities on the other. This tension between local priorities and bi-national imperatives became a recurrent drama along the banks of the St. Lawrence. Below, an antediluvian story is told, a moment when local communities' concerns provisionally dovetailed with larger forces, and forestalled an oncoming deluge.

*Private Dreams, Public Power, and a Navigable Future*

By the turn of the century, the development of hydroelectricity to produce power and light became an important, if supplemental consideration in the aspirations of Great Lakes-St. Lawrence waterway advocates. As early as 1881, private enterprise began producing electricity at Niagara Falls, and by the 1890s, these interests had appreciably amplified its development.<sup>1</sup> During this period, deep waterway advocates focused

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<sup>1</sup> Reference to the earliest development of electricity at Niagara Falls, by the Niagara Power and Manufacturing Company for use in arc lighting, is found in: Emerson B. Biggar, *Hydro-Electric*

exclusively on circumventing obstacles to navigation not harnessing their capacity to produce power. In fact, the IDWA never discussed hydroelectric production in the course of its proceedings, except in a passing reference to the novelty of electrically operated locks installed on the Canadian canal at Sault St. Marie.<sup>2</sup> Like Niagara Falls, which the Welland Canal bypassed, navigation enthusiasts saw the Long Sault Rapids as an impediment, not as an opportunity. But when a private power proposal threatened to limit the navigable potential of the Long Sault, deep-water advocates appropriated the idea to develop navigation and power in tandem. Even then, they only pursued hydroelectricity as a means to a navigable end.

The debate about the future of the Long Sault began in 1907 when the Long Sault Development Company and its Canadian correlate, the St. Lawrence Power Company – both subsidiaries of Alcoa – quietly began purchasing parcels of land on islands around the Long Sault and along both sides of the adjacent shoreline. Local residents also took note when the Long Sault Development Company dispatched a team of fourteen engineers to one of the largest of these islands – Barnhart Island – leading local newspapers to speculate that the Company had deployed this team to survey potential hydroelectric sites, but the details remained an open question.<sup>3</sup> The Long Sault Development Company quickly confirmed local suspicions when it applied to the State of New York for the “exclusive and perpetual” right to develop power and construct

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*Development in Ontario* (Toronto: Biggar Publishing Inc., 1920), 31. However, the non-electric power potential of Niagara Falls was widely recognized beforehand.

<sup>2</sup> The electric locks were installed at Sault St. Marie in 1894. International Deep Waterways Association, *Proceedings of the First Annual Convention*, 164, 229. There is also a mention of electricity as potentially applied to railroads, and the possibility of competition therefrom, see: *Ibid.*, 33, 447.

<sup>3</sup> As late as 1910, a dispatch from Ottawa questioned – “who are the American capitalists back of the power project at the Long Sault Rapids?” And one answer (which was clearly evident by 1910) offered was “Arthur Davis and his aluminum monopoly”, meaning Alcoa. Printed in: “Capitalists Back Long Sault Scheme,” *Massena Observer*, March 3, 1910, 1.

navigation works at the Long Sault; and their Canadian correlate petitioned Ottawa for authorization to construct additional dams and power works on the Canadian side.<sup>4</sup>

When they publicly announced their plans, the companies promised to construct “the greatest hydro-electric plant in the world,” generating power and prosperity in adjacent communities.<sup>5</sup>

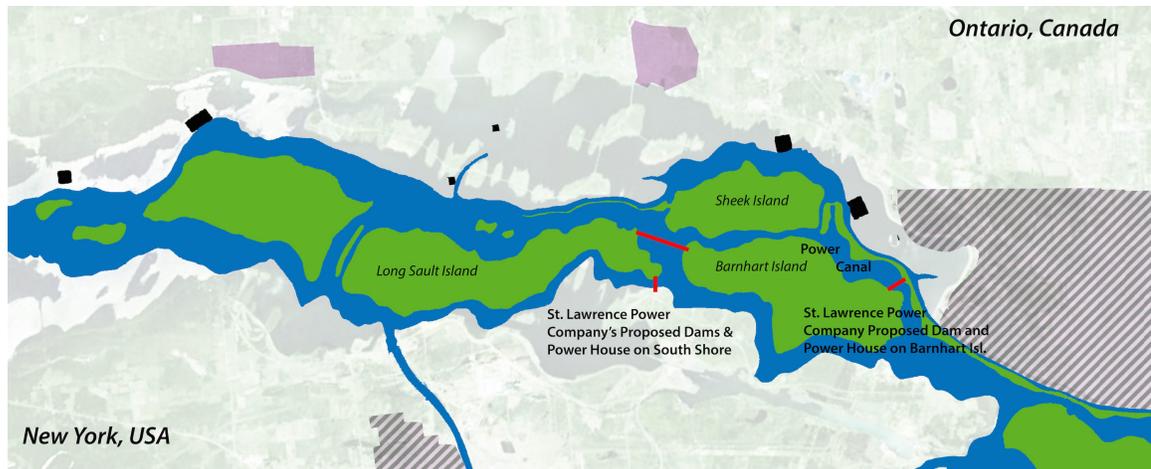
The Alcoa subsidiaries proposed building two main dams, a powerhouse, and other associated works. The first dam, in American territory, would be 3,800 feet long and stretch from the upper end of Barnhart Island across the river’s main channel to the northeastern end of Long Sault Island. An additional dam and lock across the south channel – from Long Sault Island to the American shore – would accommodate navigation. They also proposed constructing a third, 1,450-foot dam in Canadian territory – from the lower end of Barnhart Island to the Canadian shore. These dams’ main powerhouse would be placed at the eastern end of Barnhart Island, and the dams supplied with water by a power canal, 1,000 feet wide, in the channel between Barnhart and Sheek Island. Finally, a second, smaller powerhouse would be placed alongside the dam and lock in the south channel.<sup>6</sup>

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<sup>4</sup> The Long Sault Development Company’s charter was granted by the State of New York on May 23<sup>rd</sup>, 1907. The St. Lawrence Power Company presented its petition to the Canadian government that December. An account of these requests can be found in: Arthur V. White, Canada, Commission of Conservation, *Long Sault Rapids, St. Lawrence River: An Enquiry into the Constitutional and Other Aspects of the Project to Develop Power Therefrom* (Ottawa: Mortimer Company, 1913), 2, 283. It should be further noted that the “exclusive and perpetual right” of the company was overturned in a constitutional challenge to their charter on December 30, 1912, see: *Ibid.*, 5.

<sup>5</sup> Quote that Alcoa was planning this plant is taken from: “Application is Made,” *Massena Observer*, November 25, 1909, 1.

<sup>6</sup> See: White *Long Sault Rapids, St. Lawrence River*, 29-30; and Mabee, *The Seaway Story*, 51.



Map of Alcoa's General Proposal<sup>7</sup>

Although the prospect of cheap and abundant power tantalized some residents of the largely rural, nearby communities in eastern Ontario and northern New York, most locals viewed Alcoa's plans with suspicion or outright hostility. The power proposal also exacerbated jurisdictional disputes between levels of government, and competing uses or visions of the boundary waters.

In 1906, the Ontario provincial legislature passed the Power Commission Act and established the Hydro-Electric Power Commission of Ontario. The world's first publicly owned and operated utility company, Ontario Hydro – its colloquial name – was a unique amalgam of a provincial government department, a crown corporation, and a municipal cooperative. Its first chairman, Adam Beck, relentlessly promoted public ownership of the electrical grid and distribution of “power at cost” to Ontario's municipalities.<sup>8</sup>

Ontario Hydro's slogan effectively encapsulated its mission – “*dona naturae pro populo sunt*” [the gifts of nature are for the public]. Under Beck's direction, Ontario Hydro

<sup>7</sup> Map created by author.

<sup>8</sup> At first, it this should be qualified to say “southwestern Ontario's municipalities”, since Ontario Hydro's early development focused on the transmission of power from the Niagara Falls generating station. Their focus began to shift elsewhere in the Province with the improvement of long distance transmission lines, and the absorption of Niagara's output. There are many excellent histories of public power in Ontario, chief among these is: H.V. Nelles, *The Politics of Development: Forests, Mines, and Hydro-Electric Power in Ontario, 1849-1941*, 2<sup>nd</sup> ed. (Montreal: McGill/Queens University Press, 2005).

slowly acquired and constructed an elaborate public system of electrical generation and transmission, which served as a model for the aspirations of public power advocates across the continent.<sup>9</sup> The Alcoa proposal provoked the first bout in a long-running jurisdictional contest between Ontario Hydro and the Dominion government; a dispute over who had the right to award power generation licenses in the province's navigable streams. During the Alcoa proposal debate, the Dominion government asserted its jurisdictional authority by requiring specific parliamentary permission to construct any works on the Canadian side of the river. This act simultaneously undermined the St. Lawrence Power Company's plans and sent an implicit message to Ontario Hydro that the Dominion would defend its jurisdictional claims.

Alcoa's proposal fared even worse in the United States. The Long Sault Development Company failed to obtain congressional authorization on two separate occasions. Shortly thereafter, the Taft administration initiated anti-trust proceedings against Alcoa and the New York legislature canceled the Long Sault Development Company's charter, asserting that the *exclusive and perpetual* right to Long Sault development was unconstitutional.

The strongest opposition to the Alcoa plan came from navigation interests. Although the Company's representatives claimed that the project would serve the interests of navigation by creating a power pool deep enough to accommodate deep-water drafts and actively sought to assuage navigation concerns in a revised proposal, the Long Sault Development Company's charter stated they were only responsible for the

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<sup>9</sup> One of the most common uses of the Ontario Hydro model was taking its transmission rates as a yardstick by which to judge the efficiency of private distribution. For example, in 1920, a "conference of mayors" in New York sought to make the case for public power ownership by claiming that Ontario household consumers paid an average of 2¢/kWh, whereas New York paid an average of 8¢/kWh or more. See: Mabee, *The Seaway Story*, 49.

preservation of existing navigation facilities. Moreover, navigation interests raised serious questions about the utility of diverting traffic from the existing Cornwall Canal to the river's south channel and about the project's long-term effect on future efforts to expand navigation facilities.<sup>10</sup> Finally, with the ratification of the Boundary Waters Treaty the proposal had to secure IJC approval for the interposition of obstructions and diversions, and the Treaty's hierarchy of uses placed the power generation explicitly below the interests of navigation.

Navigation interests voiced the strongest and most pervasive objections, but the most interesting set of concerns appeared in a report conducted by the recently formed Canadian Commission of Conservation and authored by a consulting engineer, Arthur V. White.<sup>11</sup> This report included many of the objections considered above, but also contained a number of other protestations, two of which are worth specific mention – “opinions respecting ice conditions,” and the proposal's effect on local uses or concerns.<sup>12</sup>

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<sup>10</sup> See the conclusions of the Canadian Commission of Conservation report: White, *Long Sault Rapids, St. Lawrence River*, 36-37. The International Waterway Commission's Hearings on the Alcoa proposal continually emphasized the paramount place of navigation interests, and that hydroelectric power production was a secondary consideration. This was further reiterated by a protest from the Montreal Board of Trade to the IWC. See: *Ibid.*, 280-377 & 278-279, respectively.

<sup>11</sup> The Laurier government established the Canadian Commission of Conservation in 1909, to provide technical data on the more efficient use of natural resources. This was largely a response to an American correlate – the National Conservation Commission – established the previous year. Clifford Sifton, the Minister of Immigration, was one of the Commission's strongest supporters and served as its chairman until 1918. Like the Boundary Waters Treaty, the concurrent activities of this Commission and its American counterpart represented a step toward a continental conservation policy. See: Alan F.J. Artibse and G.A. Stelter, “Conservation Planning and Urban Planning: The Canadian Commission of Conservation in Historical Perspective,” *Planning for Conservation*, Roger Kain, ed. (New York: St. Martin's Press, 1981), 17-36.

<sup>12</sup> The term “opinions respecting ice conditions” is taken directly from a subtitle of the report. White, *Long Sault Rapids, St. Lawrence River*, 31.

*Frozen Rivers, Local Voices*

Ice – the perennial obstacle to Great Lakes-St. Lawrence navigation – was addressed by two opposing submissions to the Commission of Conservation’s report. Interestingly, the report’s summary introduces the problem of ice by questioning the expertise of engineers: “The magnitude of the St. Lawrence river, and the tremendous forces latent in it, may act in ways as yet undiscerned by members of the engineering profession.”<sup>13</sup> Arthur White illustrated this claim by invoking the ice-dams that caused the severe flooding of the powerhouses at Niagara, and the unanticipated, devastating flooding in Ohio during March 1913.<sup>14</sup> He concluded: “Nature does not permit herself to be harnessed without, frequently, making strong protests.”

Severe flooding, caused by ice-dams, occurred on the St. Lawrence in 1840, 1879, 1887, 1895, 1898, 1901, and 1905; however, the Long Sault Development Company’s engineer claimed that its project, by raising the water level and artificially keeping the channel open, would ameliorate the causes of these previous disasters.<sup>15</sup> An alternative assessment by Professor H.T. Barnes, Director of the Physics Department at McGill University, repudiated the Company’s claims. Barnes observed that the St. Lawrence’s current, which averages one mile/hour in the main channel and open spaces, if unimpeded would prevent the formation of ice over the water’s surface. However, ice-packs form in the River’s narrower spaces and create frozen blockades where the ice

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<sup>13</sup> The first submission is by Professor H.T. Barnes entitled “Ice Conditions on the St. Lawrence” – Ibid., 252-259. Followed by a report written by the chief engineer behind the Alcoa proposal, J.W. Rickey, entitled “Ice James Between Morrisburg and Cornwall.” Ibid., 266-272. The problem of ice is also discussed in Arthur V. White’s overarching report: Ibid., 31-34.

<sup>14</sup> White notes how engineers severely underestimated the circumstances surrounding these events. Also, the Ohio flooding was caused by excessive rainfall not the presence of ice-dams. Ibid., 31.

<sup>15</sup> The worst two instances were in 1887 and 1905, See: Ibid., 260. For a summary of Chief Engineer J.W. Rickey’s argument, see: Ibid., 32-33.

builds backward against the current, eventually covering large areas. In his report, Barnes identified three types of ice: Surface or Sheet, Frazil, and Anchor.

Surface ice is the first to form when the temperature drops below freezing. At first it is blown by the wind as “ice-scum” into the bays and river’s narrower spaces, where it begins to form an ice-pack and accumulates, often extending many miles upstream and covering a current of quickly flowing water. Barnes’ research showed that the surface ice’s thickness averaged about 26 inches over most of the St. Lawrence, reaches maximum thickness in late March, and decreases by about half in mid-April. When rotted by the sun and warm winds of spring, the sheet becomes a mass of vertical ice needles, which sink and melt in the warmer undercurrent.

The second form of ice is “Frazil” – a French Canadian term for fine, spicular ice that forms in open channels where the current moves too swiftly to accumulate sheet ice. It is partially unattached surface formed ice that does not freeze into a surface sheet, and partly the product of the interior freezing of the mass of water. Frazil crystals vary in fineness and grow in bulk when carried by open water. Barnes claimed: “it is frazil ice which causes an open channel to be of so much trouble to engineering operations whenever frost occurs,” because it is carried below the surface ice by currents, can dramatically change the river’s level when stopped, settles upward to join the surface sheet, and builds down along the channel’s sides. In the St. Lawrence, this process is most prevalent at Cornwall, ON, where “tons upon tons” of frazil ice generated by the swift, agitated current of the Long Sault come to settle in the quieter waters of Lake St. Francis. Here, the frazil ice rises toward the surface and rapidly forms an ice-dam. Behind this dam, the channels around Cornwall Island become choked and the winter ice-

pack begins. This ice-pack is almost entirely solid all the way back to the end of Barnhart Island, but its size is significant diminished by Lake St. Francis' absorption of the enormous quantities of frazil ice generated during the highest ice-producing months of December and January.

The third form of ice is "Anchor," which, as the name implies, is attached or anchored to the bottom of a lake or stream. Anchor ice is the most unusual and, in a sense, the most dangerous. It tends to form along the bottom of fast flowing rivers during periods of extreme and sudden cold, when entangled frazil crystals coalesce around submerged objects, like rocks. It may be the most dangerous because of its unpredictability, potential for damaging dikes and other water infrastructure, and interference with the operation of hydroelectric turbines by significantly reducing the flow of water or seizing their motion entirely.<sup>16</sup>

Barnes' description of ice varieties directly informed his objection to the Alcoa plan. He speculated that the construction of hydroelectric dams in the Long Sault would transpose the formation of the ice-dam upriver from Lake St. Francis to the narrow channels of the Long Sault. If the Lake did not absorb the masses of early winter frazil ice, the winter ice-pack would likely form above the dams. In this case, the hydroelectric dams would hold the ice back until the April thaw and cause serious delays to navigation. However, Barnes concludes with an illuminating conceit, set out at the chapter's beginning: "No man can determine the serious consequences which might result from introducing these artificial dams in the narrow portions of the river... Nature asserts

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<sup>16</sup> All this information on the varieties of ice and their formation is paraphrased from the submission of H.T. Barnes: "Ice Conditions on the St. Lawrence" to the Canadian Commission of Conservation's report on the Long Sault, See: *Ibid.*, 252-258.

herself with irresistible force when the struggle between water and ice takes place in so mighty a river as the St. Lawrence.”<sup>17</sup>

The problems presented by ice and concerns voiced in Barnes’ report are recapitulated in submissions tendered by local communities, who expressed similar fears about the exacerbation of damage caused by ice.<sup>18</sup> White’s report devotes a considerable amount of attention to the concerns of locals and the project’s possible effects on their communities and daily practices. A record of local consternation about the proposal is included in the report as Appendix XXIV, and White’s conclusions unexpectedly preference local concerns over expert opinion.<sup>19</sup> Accordingly, he stated: “With all respect given to the engineers who have given their opinions, it is submitted that the question is not an engineering problem... It does not appear necessary to express an opinion as to whether the weight of evidence or probability is in favour of the view expressed by the engineers or that expressed by the residents of the locality who have intimate knowledge of the history of the river for many years past. The fact that there is any – even the slightest – difference of opinion is a sufficient reason for condemning the proposal.”<sup>20</sup> This statement testifies to White’s willingness to privilege local, tacit knowledge acquired through observation and tactile experience over abstract, technical expertise.

Petitions presented to the Dominion government by the village of Morrisburg and the village of Iroquois and Williamsburg Township, demonstrate the scope and rationale

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<sup>17</sup> The summary of his argument, as applied to the St. Lawrence, is taken from: *Ibid.*, 258-259.

<sup>18</sup> The most vociferous and thorough expression of these concerns comes from Iroquois and other villages in Williamsburg Township. These petitioners provide a similar explanation of causes and a great deal of anecdotal, historical evidence for past ice caused flooding events, *Ibid.*, 244-248.

<sup>19</sup> *Ibid.*, 240-251.

<sup>20</sup> *Ibid.*, 36.

of local opposition to the Alcoa backed proposal. These municipalities conceded that some of the larger towns – like Brockville, ON – had been seduced by the promise of cheap power and endorsed the project. However, the petitioners doubted the sincerity of this promise, and believed: “the company will transmit the great bulk of their power to New York, where it can be delivered *en bloc*.”<sup>21</sup> They objected to foreign capitalists developing the power potential of the Long Sault, before a local market existed for its use. They also worried that once developed and sent south of the border, “[this power] will never be brought back, and our share of that magnificent heritage and birthright will be gone forever.”<sup>22</sup>

However, these communities’ primary concern was neither the inequitable distribution of power, nor even the potential damage caused by changes in the distribution and accumulation of ice. At the heart of their opposition was the power pool. When it became evident that the water held back by the dams would drown out the Long Sault Rapids and likely extend twenty miles upriver, adjacent communities amplified their protests. The petitioners representing Iroquois and Williamsburg Township argued: “the towns and farmlands east of Prescott are liable to serious damage from the raising of the water, which *will occur*.” They questioned the ability of engineers to anticipate “to what length water will be backed up at Morrisburg by the proposed dam.”<sup>23</sup> A representative from the villages of Morrisburg, Williamsburg, Matilda, and Osnabruck spoke at the IWC’s hearings on the Alcoa proposal and stated: “those whom I represent

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<sup>21</sup> Ibid., 243.

<sup>22</sup> Ibid., 241-242.

<sup>23</sup> To support their contention that engineers could not determine the extent of the flooding, they cite Prof. Mansfield Merriman of Lehigh University, one of the “greatest authorities on hydraulics”, who claimed the irregular form of the river bed and shores meant this scenario was impossible to calculate. Ibid., 243 (emphasis added).

feel that the inevitable result would be that it [the water] will be dammed back upon their property and their interests adjoining the river.”<sup>24</sup> Concern about loss and damage to property abutting the river formed only part of their objections; they also protested the experiential, aesthetic, and sentimental losses that would be incurred.

Many locals found the specter of burying the Long Sault Rapids utterly intolerable. The Morrisburg petitioners questioned: “for mere commercial purposes to enrich capitalists, why should the scenic beauty of our noble St. Lawrence be destroyed?”<sup>25</sup> On this aesthetic point, protests resounded from outside the region. For example, a representative of the Toronto Board of Trade stated: “These rapids are one of the wonders of the world... they are incomparable; they are unequalled...one of the marvels of nature. The proposition implies that it shall be destroyed... You may take certain portions out of them and develop them; but in the face of public opinion you cannot destroy them.”<sup>26</sup> Even Prime Minister Laurier said that he viewed any attempt to dam the historic St. Lawrence as “something like a sacrilege.”<sup>27</sup>

These aesthetic objections illuminate an entangled relationship between preservation and conservation. When adjacent communities and rapid admirers objected to the destruction of the rapid’s scenic beauty to enrich “capitalists,” they exemplified a multifaceted relationship with the river. For many locals, the Long Sault was a space for work and recreation, a landscape whose scenic beauty and economic potential were inextricable. Their objection did not preclude commercial development, but protested the enrichment of capitalists and foreign control. They did not see the rapids’ aesthetic

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<sup>24</sup> Ibid., 347.

<sup>25</sup> Ibid., 242.

<sup>26</sup> This quote comes from Barlow Cumberland, a representative of the Toronto Board of Trade, speaking at the IWC hearings on the Alcoa proposal. A copy of his remarks can be found in: Ibid., 353-354.

<sup>27</sup> Laurier is quoted in: “Parliament Talks of Power Measure,” *Massena Observer*, April 14, 1910, 3.

preservation and utilitarian conservation as mutually exclusive goals. The representative from the Toronto Board of Trade's comments are illustrative of this entanglement. He tacitly noted the delicate balance between development and destruction by claiming that portions of the rapids could be taken for development but public opinion would not countenance their utter destruction. Like Kurkpatrick Dorsey's claim that the success of wildlife conservation treaties hinged on the mobilization of both economic and aesthetic arguments, opponents to the Alcoa proposal crafted their grievances based on economic as well as sentimental rationales.

Calls to preserve the scenic beauty of the Long Sault and the experiences afforded by the rapids resound most obviously and strongly in local protestations. From their statements, it is clear that locals possessed an embodied, tactile knowledge of river. One local river captain described "men of much experience on the river who have watched the operations of its waters winter and summer for long years, and understand its currents, shoals and rapids."<sup>28</sup> This evokes a different variety of knowledge and expertise than the kind possessed by Alcoa's engineers. This knowledge is based on tactile experience and direct interaction with the St. Lawrence and its rapids at the Long Sault. If the project drowned the rapids, these forms of knowledge, and perhaps the livelihood of its possessors would be simultaneously be lost in the deluge.

In this instance, local knowledge contravened technical expertise. The project's engineers contended that the proposed South Sault channel navigation route would be deeper and could move people and freight more efficiently than the existing Cornwall Canal. The river captain quoted above countered: "*Experienced river men* think that, as a

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<sup>28</sup> Taken from a submission by Capt. W.J Murphy of Morrisburg, ON to Arthur White's report for the Commission of Conservation: White, *Long Sault Rapids, St. Lawrence River*, 259.

matter of fact, the current above Cornwall is so strong that no tow of barges or freight boats could go up the proposed site of the lock.” Locals from Iroquois concurred: “*Every river man knows* that the current opposite Cornwall is running swifter than any place in the boat channel between the Cornwall canal and Morrisburg, and it would certainly not be a saving in time to cause a boat to hang in such a current.”<sup>29</sup> The certitude that underscored these locals’ remarks gives their content the appearance of simple truisms – they *categorically* knew that the current is strongest in the south channel across from Cornwall. Moreover, in a number of places, the locals’ statements deferred to the knowledge of the region’s oldest inhabitants.<sup>30</sup> Clearly, they privileged the lived experience of life-long residents over the abstract projections and calculations of engineers. This knowledge was derived from immediate experience, passed generationally, and embodied by locals.

Although noteworthy, the proposal did not fail because of local considerations. Their articulation presents a useful aperture into the dissonance between varieties of knowledge, as well as the persistent tension between development and physical or experiential loss. Moreover, the appearance of tenacious, local resistance to the Alcoa proposal foreshadows unsuccessful protests against the inundation of these very communities a half-century later. But in this instance, the proposal failed for myriad reasons. The Dominion government proved unwilling to allow foreign capitalists to develop the Long Sault’s power potential, especially for foreign consumption. Ontario Hydro believed that the right to produce hydropower in Ontario’s rivers should reside with the province, and not be given to private companies by Ottawa. One later

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<sup>29</sup> Quotes are taken from: Ibid., 251, 249, respectively (emphasis added).

<sup>30</sup> For references to the region’s oldest residents, see: Ibid., 248, 251 & 371.

commentator claimed: “the majority of Canadians were not yet psychologically prepared for the cooperative development and use of the St. Lawrence,” because they retained a “possessive view of that river.”<sup>31</sup> The nebulous collective psyche of Canadians aside, the proposal also failed to garner the requisite support in Congress and Albany. Ultimately, the proposal failed because of widespread concern that it would impede or circumscribe the future navigability of the St. Lawrence.

### Seaway Advocacy Redux

The Alcoa proposal and resolute objection of navigation interests mobilized a new Seaway advocacy movement in Ontario, with Daniel B. Detweiler of Berlin, ON (now Kitchener) at its helm. Detweiler’s direct involvement in the Seaway movement began somewhat unexpectedly. The president of a boot and shoe manufacturing company and former president of Berlin’s Board of Trade, Detweiler involved himself in many public causes. For example, in Berlin, he fought for better town planning, the creation of parks, and workmen’s compensation. He also rode his bicycle from town-to-town in southern Ontario promoting public ownership of hydroelectricity. In fact, Detweiler allegedly won Ontario Hydro’s first chairman, Adam Beck, over to the public power cause.<sup>32</sup> From his papers, it appears that Detweiler first took an interest in the Seaway idea in 1892 – the same year as the Lind and Denison resolutions – when he began compiling newspaper clippings about it in a scrapbook.<sup>33</sup> This early interest evolved when confronted with the Georgian Bay Canal proposal; he thought the well-traveled Welland-St. Lawrence route

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<sup>31</sup> Willoughby, *The St. Lawrence Waterway*, 68.

<sup>32</sup> This claim is made in: Mabee, *The Seaway Story*, 54.

<sup>33</sup> “History of the Great Waterways Union of Canada, 1909-1920,” LAC, *Daniel B. Detweiler fonds*, MG30-A7 (R2312-0-0-E), Vol.1.

deserved first consideration.<sup>34</sup> Within a few months, Detweiler devoted his considerable energy and conviction to Seaway promotion.

In January 1912, he organized a meeting of mayors, aldermen, and board of trade officials from several southern Ontario towns to press them to support the construction of a 32-foot waterway from Lake Superior through the St. Lawrence to the Sea. The *incidental power* generated by the project, he predicted, “would make Montreal and Eastern Ontario the center of the electrical manufacturing industries of the world.”<sup>35</sup> The attendees – most of whom were closely associated with Ontario Hydro and the public power movement – voiced their opposition to the construction of any private power works, placing them squarely at odds with the Alcoa proposal. The meeting resolved to urge the Dominion government to expand the Welland Canal “upon lines sufficiently large to accommodate ocean tonnage and to proceed with as little delay as possible... with the ultimate object of having an ocean waterway through the Great Lakes to Port Arthur.”<sup>36</sup> To continue their promotion of this goal they formed the *Great Waterways Union of Canada*, and installed Daniel B. Detweiler as chairman.

Unlike its bi-national IDWA predecessor, the Union was exclusively a Canadian organization; however, it found important political allies in the United States. For example, U.S. Senator Charles E. Townsend (R-MI) and Horace C. Gardner of the Chicago Association of Commerce supported the Union’s program and activities.

Although some detractors called the Union’s proposals “impractical and visionary,” the

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<sup>34</sup> Detweiler expressed this preference in a letter to Adam Beck. Detweiler to Adam Beck, November 5, 1911, LAC, *Daniel B. Detweiler fonds*, MG30-A7 (R2312-0-0-E), Vol.1, “History of the Great Waterways Union of Canada, 1909-1920.”

<sup>35</sup> The fact that the power production was “incidental” to navigation is an important qualification. Great Waterways Union of Canada, *The Inland Waterways of Canada: Ocean Navigation via the St. Lawrence and Welland Route* (Berlin, ON: The Union, 1912), 20.

<sup>36</sup> *Ibid.*, 5.

Dominion quickly rewarded their efforts.<sup>37</sup> In early 1913, Prime Minister Robert Borden's Conservative government committed itself to deepening the Welland Canal from 14 to 25 feet; and Detweiler could justifiably claim a "good share of the credit" for his organization.<sup>38</sup> The Union received further gratification when several parliamentarians began demanding a "complete investigation of the [Great Lakes-St. Lawrence] system with a view to conserving the whole waterway." William Pugsley, the former Liberal Minister of Public Works and participant in the negotiation of the Boundary Waters Treaty, declared that the St. Lawrence "should be dealt with as one great system, the various parts of which are intimately connected with one another."<sup>39</sup> In response, the Prime Minister confessed that "sooner or later" the government would have to survey the whole system, but added the important caveat that its comprehensive development could not be undertaken "without the consent and probably the cooperation of the Government of the United States, or, at least of the Government of the State of New York."<sup>40</sup>

The moment seemed auspicious to push a corresponding expansion of the St. Lawrence Canals, accompanied by the construction of associated hydroelectric facilities,

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<sup>37</sup> *Berlin News Record*, February 17, 1913, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 50, Folder 1, "Notebooks – Books and Chronology, 1913-1935."

<sup>38</sup> The Borden government decided to pursue deepening the Welland instead of the Georgian Bay Proposal. The Welland was to maintain a minimum depth of 25' with 30' in its locks. Construction began in 1913, but because of the First World War and other reasons it was not completed until 1932. The quote is taken from a letter written by Detweiler to a conservative MP – W.G. Weichel of Waterloo, ON. Detweiler to Weichel, February 15, 1913, LAC, *Daniel B. Detweiler fonds*, MG30-A7 (R2312-0-0-E), Vol.1, "History of the Great Waterways Union of Canada, 1909-1920."

<sup>39</sup> Both these quotes are from the former Liberal Minister of Public Works in Wilfrid Laurier's previous administration, William Pugsley. But the *Debates* in the House of Commons on March 27, 1913 are filled with calls for the further investigation of the whole Great Lakes-St. Lawrence system. Canada, Parliament, House of Commons, *Debates*, 12 Parliament, 2 Session, Vol.110, No.4 (March 27, 1913), 6520, 6526.

<sup>40</sup> *Ibid.*, 6527.

and entreat the United States to participate.<sup>41</sup> Having secured the Dominion government's commitment to deepen the Welland as well as tacit support for more comprehensive development, the Union turned its attention to these objectives and encouraged their political allies in the United States to pursue the Seaway agenda in Congress. Unlike earlier incarnations of the Seaway movement, they possessed a new diplomatic mechanism through which they could advance their goals – the IJC.

*The IJC and the Seaway Debate*

In the United States, the Alcoa proposal motivated Senator Charles E. Townsend to assume the Seaway advocacy mantle. In 1911, Townsend met with President Taft and pitched an idea – the Seaway for the Midwest and reciprocity for Canada. Since confederation, Canadians coveted a reciprocal free trade agreement for natural products, but Congress implemented and continued to amplify protectionist policies. This culminated with the 1897 Dingley Act, which raised tariff rates to unprecedented heights.<sup>42</sup> As a moderate Progressive, President Taft hoped to reform and reduce tariffs, and, to this end, he solicited a reciprocal trade agreement with Canada. Midwestern farmers strongly objected to the introduction of Canadian agricultural products into the American market on equal terms, but Townsend saw an opportunity. The Seaway could alleviate Midwestern concerns and reciprocity could induce Canadian participation.<sup>43</sup> Accordingly, in June 1911, he introduced a motion into the Senate requesting that the

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<sup>41</sup> In fact, the Dominion government suggested that Ontario Hydro investigate the power potential of the St. Lawrence with the goal of producing power and deepening its navigation channels simultaneously. See: Hydro-Electric Power Commission of Ontario, *Statement and Engineering Report* (Toronto: The Commission, 1925), 22-23.

<sup>42</sup> See: Thompson and Randall, *Canada and the United States: Ambivalent Allies*, 56-61, 81-88.

<sup>43</sup> Townsend's meeting with President Taft regarding this proposal was reported in: "Proposes a Deep Canal to Ocean," *Detroit Free Press*, March 4, 1911, 3.

President negotiate cooperative Seaway construction as part of the reciprocity proposal.<sup>44</sup> However, the timing was inauspicious; Alcoa's proposals had generated a great deal of bitterness, and the State Department believed that prior to any new negotiations, the newly established IJC should be given time to study and report on the boundary water issues already submitted to it.<sup>45</sup> Townsend's resolution died in committee without receiving a vote; and ironically, Canada rejected the reciprocity agreement to which it would have been appended.

By 1913, Townsend's motion had a better chance of passing the Senate. With the Canadian government committed to deepening the Welland and a dedicated advocacy organization in the Great Waterways Union, the Seaway idea seemed to have momentum north of the border. Moreover, the defeat of the reciprocity agreement negated Midwestern apprehension toward Townsend's *quid pro quo* Seaway for the reciprocity deal. For now, negotiations could proceed without the specter of direct Canadian competition in the resource markets of the United States. With the Seaway's prospects greatly improved, and at the direct urging of the Great Waterways Union, Townsend reintroduced his motion into the Senate. In July 1913, the Senate promptly and unanimously approved the resolution.<sup>46</sup> Townsend enthusiastically wrote to Detweiler:

"It would almost be an international crime, if now, when the possibilities of this

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<sup>44</sup> He actually introduced it in the House of Representatives first – in March 1911 – when he still held a seat in the House. However, he was elected to the Senate and almost immediately reintroduced the motion there. The text of his motion and accompanying debate can be found in: United States, Congress, Senate, *Reciprocity with Canada: Compilation of... Congressional Proceedings*, Senate Document 80, 62 Congress, 1 Session (April 28, 1911), 3518-3531. The motion itself is found on page 3526.

<sup>45</sup> For an articulation of the State Department's position see: Acting Secretary of State Huntington Wilson to Knute Nelson, Chairman of the Senate Committee on Commerce, May 4, 1912. NARA II, *Department of State Central Files*, RG 59, 711.42157/2.

<sup>46</sup> One small amendment was made to his original motion. The word "boundary" was inserted before "waterways" as a clarification. United States, Congress, Senate, *Congressional Record*, 63 Congress, 1 Session (April 10, 1914), 6527.

enterprise are known, there shall be much delay in undertaking it,” and he confidently assured his Canadian collaborator that they would both live to see ocean-going vessels docked at Toronto and Chicago.<sup>47</sup>

Townsend’s aplomb was premature but not unwarranted. In response to the passage of his resolution the State Department referred the “Seaway question” to the IJC for investigation, and began to gauge Canada’s interest in following suit. This marks the IJC’s first interaction with the Seaway idea, and illuminates the messy and illusory boundaries between objective expertise and partisan advocacy.

Ratified on May 5, 1910, the Boundary Waters Treaty officially established the IJC, but the two national delegations did not meet until February 2, 1912. The 1911 victory of Robert Borden’s Conservative Party caused the delay. After arriving in office, Borden telegraphed the Colonial Secretary in London to advance three new candidates for the Canadian IJC delegation, cancelling his predecessor’s selections.<sup>48</sup> Once Canada and the United States appointed their commissioners, funded their delegations, and passed the requisite enabling legislation, the two sides met to craft and adopt “rules of procedure.”<sup>49</sup> In addition to defining their operating procedures, these rules ostensibly ensured that the IJC remained non-partisan and objective in its decisions, characteristics that grant the Commission its epistemic authority. The IJC is not simply an arbiter of

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<sup>47</sup> Charles E. Townsend to Detweiler, June 2, 1913 & August 14, 1913, LAC, *Daniel B. Detweiler fonds*, MG30-A7 (R2312-0-0-E), Vol.1, “History of the Great Waterways Union of Canada, 1909-1920.”

<sup>48</sup> Laurier had chosen Sir George Gibbons, Alexander P. Barnhill, and Aimé Géoffrion; whereas the commissioners actually appointed, on Borden’s recommendation, were Chase Casgrain (KC), Charles A. Magrath (Dominion Topographical Surveyor), and Henry A. Powell (KC). Borden’s cancellations meant that Sir George Gibbons, who was so instrumental in the IJC’s creation, never actually served as one of its commissioners. Canada, Parliament, House of Commons, *Canadian Sessional Papers*, No.119, 2 George V, 1911, “Telegrams,” 2-15. Also see: Chacko, *The International Joint Commission*, 81-84.

<sup>49</sup> Chacko, *The International Joint Commission*, 79-82, 336-368. The text of these rules can be found in “Appendix B” of: *Ibid.*, 395-404. As well as: International Joint Commission, *Rules of Procedure of the International Joint Commission*, February 2, 1912.

disputes, but also a site of environmental knowledge production and dissemination. To buttress its epistemological authority the Commission claimed impartiality and deployed scientific and technological expertise to legitimate its decisions and recommendations. However, as I will show, records from the IJC's earliest interaction with the Seaway debate call this notion into question and problematize the boundary between expertise and advocacy.

Townsend's motion compelled the State Department to enlist the IJC into the Seaway debate, and set in motion a somewhat clandestine series of interactions between representatives of the IJC and Seaway advocates. Initially, Charles Townsend met with the chairman of the IJC's American delegation, James A. Tawney. The tenor of this meeting encouraged Townsend to enthusiastically report to Detweiler that the U.S. section of the IJC was in "hearty sympathy with the objects which you and I have at heart."<sup>50</sup> Internal documents between Tawney and State Department officials corroborate these sympathies. From these documents, it appears that Tawney went as far as explicitly suggesting a strategy for expediting Seaway approval. The IJC's American chairman argued that the Boundary Waters Treaty could be interpreted to include Seaway construction, bypassing the laborious tripartite negotiations required for an additional treaty.<sup>51</sup> Working from this assumption, he recommended the following course of action: Townsend's resolution be transmitted to the IJC by both national governments, triggering an IJC investigation and report; and following this report, the two governments could pass concurrent, bi-national legislation authorizing Seaway construction. In Tawney's

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<sup>50</sup> Townsend to Detweiler, November 26, 1913, LAC, *Daniel B. Detweiler fonds*, MG30-A7 (R2312-0-0-E), Vol.1, "History of the Great Waterways Union of Canada, 1909-1920."

<sup>51</sup> James A. Tawney to Secretary of State William J. Bryan, August 8, 1913, NARA II, *Department of State General Files*, RG 59, 711.42157/6.

estimation, this simple and inexpensive procedure avoided the pitfalls of British participation and Senate ratification, and adhered to the spirit of the Boundary Waters Treaty by allowing the United States and Canada to deal with one another directly.<sup>52</sup> The subtext of Tawney's plan is that the IJC would unequivocally endorse the Seaway idea – an assumption he was uniquely positioned to make a reality.

The demarcation between advocacy and institutional expertise became more obscure when the State Department officially acted on the Townsend resolution. In early 1914, following a conference with Secretary of State William Jennings Bryan, Townsend and Tawney announced their intention to enlist the IJC's Canadian delegation to support the suggestion that Canada and the United States jointly construct a "deep waterway for ocean-going ships from Montreal to the head of the Lakes."<sup>53</sup> However, this suggestion was a direct inversion of the IJC's advisory role. The terms of their investigatory powers required the national governments to solicit their input, but in this instance they played an active and self-referential part in initiating an investigation.

On the American front, the Tawney-Townsend plan worked. The following month the State Department officially asked the British ambassador to ascertain the Canadian government's willingness to permit an IJC investigation into the best development of the waters of the Great Lakes-St. Lawrence "for the deep-water navigation and transportation purposes, for fishing purposes, and for power purposes."<sup>54</sup>

At Tawney's suggestion and with his direct input, Townsend and Assistant Secretary of

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<sup>52</sup> He outlines this plan in a letter to Townsend, see: James A. Tawney to Charles E. Townsend, August 8, 1913, NARA II, *Department of State General Files*, RG 59, 711.42157/6.

<sup>53</sup> Even if the Canadian section agreed they could not unilaterally investigate, let alone approve the project, the terms of reference had to come from the two national governments. Quoted in: Charles Vinning, *The St. Lawrence Waterway: A Simple Explanation* (Toronto: Toronto Star, 1928), 9.

<sup>54</sup> J.B. Moore to Sir Cecil Spring-Rice, February 24, 1914, Letter 262, NARA II, *Department of State General Files*, RG 59, 711.42157SA 29/-.

State John Bassett Moore collaboratively drafted a set of attendant questions meant to inform the terms of the IJC reference.<sup>55</sup> This continued self-referential dialogue further underscores the positive Seaway predisposition held by Tawney and the American delegation. The accompanying questions asked if cooperative development of the boundary waters for deep-water ocean-going navigation was “feasible and desirable.” Other questions were: would new canals necessitate diversions, and affect lake levels? What effect would the plan have on fisheries? How could hydroelectric power be best developed in tandem with navigation? Finally, they suggested paying special attention to construction and maintenance costs, how these costs could be apportioned equitably, and if public ownership was possible or desirable.<sup>56</sup> If the Canadian government accepted these terms of reference, the IJC had a formidable task set before them. These suggested questions required them to report not only on the Seaway idea proper, but also on the multi-purpose development of the associated boundary waters, its implications for fisheries, and on the fervent debate about public ownership.

News that the two governments initiated an official diplomatic exchange about the Seaway engendered expressions of support on both sides of the border. Advocates held public meetings at Detroit and Windsor to promote prompt action, and Adam Beck led a delegation of 2,000 people to Ottawa to demonstrate support for the project. One advocate, the President of the Ontario Municipal Electric Association, J.W. Lyon, noted that the project, if approved, could appropriately celebrate 100 continuous years of peace

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<sup>55</sup> Mabee, *The Seaway Story*, 58.

<sup>56</sup> The first question also included the phrase “by concurrent or reciprocal or by special agreement”, suggesting some ambiguity about the procedure through which the necessary legislation would be enacted. It is important to note that a Treaty is specifically and deliberately not mentioned, which reflects the input of Tawney’s plan. Willoughby, *The St. Lawrence Waterway*, 82. Also see the letter of transmission: J.B. Moore to Sir Cecil Spring-Rice, February 24, 1914, Letter 262, NARA II, *Department of State General Files*, RG 59, 711.42157SA 29/-.

between Canada and the United States.<sup>57</sup> However, the Canadian government had a more tepid reaction. Prime Minister Borden worried the Dominion had been too ambitious and overextended itself with the construction of three transcontinental railroads. He also noted that Seaway support was localized in Ontario. For months, the Borden government left the American invitation unanswered. In July of 1914, the British Secretary of State for the Colonies felt compelled to remind Canada's Governor General that the American note from February awaited a response, and asked if the Dominion government was "in a position to express their views."<sup>58</sup> No answer was ever given. By early August the British Empire, including Canada was engulfed in the First World War.

### World War I

The onset of war temporarily dampened the traction Seaway advocates had achieved. However, a small cadre of determined individuals kept the faith during the war and planned to revive their "Seaway crusade" at its end.<sup>59</sup> Construction on the Welland also received a hiatus, but resumed with the cessation of hostilities. The War engendered new incentives for Seaway construction, enlisted new constituencies to the cause, and revived a proposal that threatened to undermine its prospects.

Pervasive wartime power shortages revitalized and proliferated proposals to dam the St. Lawrence. In Quebec, the Power Development Company applied for Dominion permission to build a dam at the Coteau Rapids, between Lake St. Francis and Lake St. Louis. Immediately, navigation interests and Seaway advocates protested. They argued

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<sup>57</sup> The minutes of the meetings at Windsor and Detroit are available in: Deep Waterways Conference, *A Deep Waterway to the Sea: Proceedings of the Windsor Conference*. January 30, 1914 (Windsor, ON: The Conference, 1914). Also see: Willoughby, *The St. Lawrence Waterway*, 82.

<sup>58</sup> A copy of this note can be found in: Lewis Vernon Harcourt, Secretary of State for the Colonies to Prince Arthur, Duke of Connaught and Strathearn, Governor General of Canada, July 6, 1914, LAC, *Sir Robert L. Borden fonds*, MG26-H (R6133-0-X-E), Vol.184, No.510, "Fisheries 1914," Reel C-4383, 101028-101068.

<sup>59</sup> The term "Seaway crusade" appears in: Mabee, *The Seaway Story*, 60.

that it would establish “a monopoly injurious to trade, industry, navigation, and public interest,” and emphasized its potentially adverse effect on St. Lawrence navigation.<sup>60</sup> The Conservation Commission of Canada, under the direction of Sir Clifford Sifton, a prominent cabinet minister, voiced an institutional objection. Reminiscent of arguments leveled against the Alcoa proposal, the Conservation Commission claimed the power would be sold “without regard to the interests of the Canadian public,” most likely to the United States, and that the future recovery of this power for domestic consumption would incite serious “international complications.”<sup>61</sup> The Borden government heeded these warnings and the Dominion rejected the Power Development Company’s application.

In the United States, Alcoa renewed a modified version of their proposal to dam the St. Lawrence at the Long Sault. In the summer of 1917, following the United States’ entry into the War, the St. Lawrence River Power Company – a rebranded Alcoa subsidiary – applied to the IJC for permission to construct a submerged weir from Long Sault Island across the River’s south channel to the American shore. Their proposal located this weir just below the Massena power plant’s existing power canal to increase its flow of water, which, in turn, augmented the plant’s productive capacity for hydroelectricity and aluminum. Essentially, they advanced a considerably scaled down version of their pre-war proposal. Mindful of the bitter opposition their previous plans had provoked, the Alcoa subsidiary claimed the weir would be a temporary measure required by the exigencies of war. The U.S. Secretary of War supported their plan,

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<sup>60</sup> This is an example of the myriad protests, taken from: Municipal Council of the City of Valleyfield, QC to R.L. Borden, Prime Minister of Canada, Telegram of October 18, 1917, LAC, *Sir Robert L. Borden fonds*, MG26-H (R6133-0-X-E), Vol.226, No.1883, “St. Lawrence River Power 1917,” Reel C-4406, 126578-126623.

<sup>61</sup> This is basically the same argument made by Arthur V. White in his 1913 assessment of Alcoa’s Long Sault development proposals, also written for the Conservation Commission. Sifton’s assessment is found in: Conservation Commission of Canada, *Report of the Ninth Annual Meeting, Held at Ottawa, November 27-28, 1917* (Ottawa: His Majesty’s Printer, 1918), 255-257.

contingent on IJC approval. In August of 1918, the IJC held hearings on the new Alcoa proposal. At the hearings, New York's Conservation Commission, an institutional amalgam of the state's forestry, fish, and game services, argued that the plan constituted "an invasion of the rights of the citizens of the state."<sup>62</sup> The Dominion government also strenuously objected on the grounds that Alcoa's project "was inconsistent with and would seriously impede the best development of the St. Lawrence River for navigation and power purposes in the interest of both countries."<sup>63</sup> To emphasize their objection, the Canadian government dispatched two cabinet ministers – Clifford Sifton and Arthur Meighen – along with Parliament's most prominent Seaway supporter – Frank Keefer (MP-Port Arthur, ON) – to Washington to voice their concerns directly to the U.S. Secretary of State, Robert Lansing.

In the meeting between these Dominion representatives and the State Department, the Canadian delegation pitched an ambitious alternative. Compelled by the latest Alcoa proposal, they suggested that the United States and Canada "take steps jointly to prepare a scheme looking to... power development in the interests of the two countries."<sup>64</sup> In short, they proposed the cooperative and comprehensive development of the St. Lawrence for power and navigation. The Secretary of State gave the Canadian contingent a courteous hearing, but their proposal did not evoke his interest. The United States government relied on the Massena operations for its wartime aluminum production

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<sup>62</sup> The Conservation Commission of New York was established in 1911. Its creation was basically a rebranding of the Forest, Fish and Game Commission, which was established in 1900. For a brief administrative history see: Jacoby, *Crimes Against Nature*, 215 (Fn1). For the quote above, see: Conservation Commission of New York, *Eighth Annual Report* (Albany: New York State, 1918), 262.

<sup>63</sup> This quote is taken from an "Order-in-Council" of the Canadian Committee of the Privy Council, dated October 12, 1918. It is reproduced in full as Appendix V, in: James White, Conservation Commission of Canada, *Conservation in 1918* (Ottawa: His Majesty's Printer, 1919), 85.

<sup>64</sup> Canada, Parliament, House of Commons, *Documents Relating to the St. Lawrence Power Company*. 9 George V, Sessional Paper 230, Vol.LIV, No.10, 1919 (Ottawa: His Majesty's Printer, 1919).

and desired immediate action to bolster their supplies. The Canadian counter-proposal to Alcoa's expansion plans required Treaty negotiations, which, even if expedited, could not be ratified until the Senate reconvened in November. By then, Alcoa planned to have its works completed. Despite the protestations of Canada and the State of New York, in September 1918 the IJC unanimously issued an order approving the construction of the weir and its maintenance for five years.<sup>65</sup>

Undeterred by this decision, the Canadian government renewed their protest. The following month they instructed the British embassy to transmit a copy of the Privy Council of Canada's "minutes-in-council" to the State Department. These minutes voiced their objection to the IJC's approval and restated their desire "that the two Governments should take immediate steps to prepare and carry out a scheme looking to the most economical and *comprehensive* development of the waters of the St. Lawrence." The dispatch further stated that "navigation is the paramount national and international use of this *great highway of commerce*... it is certain that the *subordinate and incidental* but important use of these international boundary waters for power purposes can never be rendered as efficient and productive through a policy of permitting a haphazard series of unrelated private enterprises as through a carefully considered and comprehensive scheme of development carried out under public auspices by the two countries."<sup>66</sup> In response to the IJC's decision and to forestall Alcoa's plans, the Canadian government

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<sup>65</sup> The order was issued on September 19, 1918. International Joint Commission, *In the Matter of the Application of the St. Lawrence River Power Company: Interim Order, Opinions and Hearings* (Ottawa: J. de L. Taché, 1919), 3-6.

<sup>66</sup> A copy of this note can be found in: "Privy Council, Minutes-in-Council, October 22, 1918," LAC, *Sir Robert L. Borden fonds*, MG26-H (R6133-0-X-E), Vol.244, No.2744, "St. Lawrence Power Co. 1918," Reel C-4416, 136470-136589 (Emphasis added).

once again offered cooperative and comprehensive development of the St. Lawrence.<sup>67</sup> However, their proposal elicited no response from officials in Washington.

The historical record offers no explicit reason for the State Department's reticence, especially in light of their pro-Seaway gestures prior to the war. Historian C.P. Wright speculated in *The St. Lawrence Waterway: A Canadian Appraisal* (1935) that the note may have never been brought to the attention of State Department officials, possibly lost in the wartime shuffle.<sup>68</sup> However, there is no specific evidence to support this notion. It is plausible that having obtained the power concessions necessary for increased aluminum production, the U.S. government lost interest in more ambitious development of the St. Lawrence, at least for the War's remainder. Other factors may have included: jurisdictional ambiguity between New York and Washington; the Canadian minutes-in-council's public power undertones, which would have aggravated certain members of Congress; and finally, in December 1918, the Secretary of War had transmitted a series of Army Corps reports to Congress containing unfavorable conclusions for cooperative action.

In brief, these Corps reports concluded that development of the International Section of the St. Lawrence "is not worthy of consideration at the present time" and recommended it should not be considered "until the actual completion and use of the Welland Canal and tangible plans for the deepening of the Canadian St. Lawrence River channel... indicate a prospective navigation by vessels of deeper draft than those now

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<sup>67</sup> I say "once again" because the Canadian government passed an "order-in-council" containing the same offer on September 2, 1918. It is contained in: Canada, Parliament, House of Commons, *Documents Relating to the St. Lawrence Power Company*. 9 George V, Sessional Paper 230, Vol.LIV, No.10, 1919 (Ottawa: His Majesty's Printer, 1919).

<sup>68</sup> Looking through the State Department's records at NARA (RG 59), I found nothing relating to this note. Giving Wright's suggestion plausibility. C.P. Wright, *The St. Lawrence Waterway: A Canadian Appraisal* (Toronto: McMillan, 1935), 21.

constituting the fleet on the Great Lakes.”<sup>69</sup> In short, these reports did not encourage American participation. The IJC’s approval of the Alcoa weir and its perceived threat to the future navigability of the St. Lawrence mobilized significant enthusiasm for the Seaway idea in Canada, but the moment was unpropitious.

Wartime transportation deficiencies also compelled bi-national reconsideration of expanded waterways, and structural changes to transportation networks. In the United States, the manufacture of railroad cars and water navigation expansions failed to keep pace with economic expansion, resulting in intractable traffic congestion. By the winter of 1917, the backlog threatened to collapse the entire American railroad network. In response to the crisis and on the recommendation of the Interstate Commerce Commission (ICC), President Woodrow Wilson decided to temporarily nationalize the railroads under the United States Railroad Administration (USRA).

William G. McAdoo, the USRA chief, acted swiftly and reorganized the railroads into three geographic divisions (East, South, and West), eliminated redundant services, shared terminals and facilities across formerly independent lines, and ordered a massive quantity of standardized rolling stock. In tandem with these initiatives, McAdoo integrated land and water transportation systems to form a loosely consolidated national transportation network. Under this system, commodities could be consigned to the most suitable modality. For example, wherever possible, waterways carried all bulk freight shipments of coal, copper, and wheat. This division of freight relieved the railroads of a considerable load and allowed them to move the remainder more efficiently.<sup>70</sup> This

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<sup>69</sup> See: United States, Congress, House of Representatives, *Examination of the St. Lawrence River from Lake Ontario to the Canadian Border*, House Document 1591, 65 Congress, 3 Session (December 14, 1918), 5.

<sup>70</sup> Willoughby, *The St. Lawrence Waterway*, 85.

federal network dissolved shortly after the War, but demonstrated the role that waterways could play in a consolidated and federally coordinated system.

Canada managed to avoid the severity of congestion experienced in the United States, largely because the federal government took action in the war's early stages preempt railcar shortages. However, wartime conditions also strained the Canadian system – the war curtailed the availability of foreign credit and created scarcity in materials and labor, which inflated prices. Under these conditions, the Grand Trunk and Northern railways faced insolvency; and, like the United States, the Canadian government nationalized railroads and integrated competing systems. Between 1918 and 1923, Canada placed three railways – the Grand Trunk, the Intercolonial, and the National Transcontinental – under the control of a new crown corporation, the Canadian National Railway (CNR). The Canadian nationalization program diverged from its American counterpart in the terms of post-war ownership. American railroads reverted to private ownership, but the CNR remained public and expanded. Only the Canadian Pacific Railway (CPR) avoided government proprietorship; and the CPR had a privately integrated system of rail and water transportation, including a fleet of steamships operating at strategic transshipment points located along the Great Lakes and St. Lawrence.<sup>71</sup>

The War illuminated basic weaknesses in transportation systems based on diffuse privately owned and operated railroads. To address these deficiencies both national governments embarked on a program of railroad nationalization and restructuring, and

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<sup>71</sup> Harold A. Innis, *A History of the Canadian Pacific Railway* (Toronto: McClelland and Stewart, 1923), 170-171.

this experience highlighted the potential advantages of a coordinated, national transportation system that built on the respective strengths of waterways and railroads.

At the War's conclusion, Seaway advocates on both sides of the border regrouped, expanded their constituency, and redoubled their efforts. The organization they spawned – The Great Lakes-St. Lawrence Tidewater Association – relentlessly pursued the Seaway dream for the following two decades.

### Conclusion

In 1961, historian Carleton Mabee observed: “when one nation was ready to take a step toward a Seaway, the other was not... [the] St. Lawrence water slipped on, largely *wasted*, to the sea.”<sup>72</sup> Mabee's sentiment reflects a lingering conservationist ethos, encapsulated by the belief that an undeveloped St. Lawrence connoted waste, and construction delays compounded the Seaway's diminishing returns. The earliest organization of deep waterway advocates, the IDWA, shared this sentiment. They argued that waterway transportation was “the free gift of nature” and condemned the dereliction of governments – “especially the United States” – in developing the “capabilities of this most cheap, ample and enduring of all mediums of transportation.”<sup>73</sup> More hyperbolically, they claimed: “Man will finish the incomplete continent and perfect it... These extravagant gifts of nature were intended to help work out the perfection of civilization in America.”<sup>74</sup> These waterway advocates *cum* adherents of conservation believed in the reciprocal and inextricable perfectibility of nature and civilization. Although their influence ebbed and flowed and their contexts and discourse changed, the

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<sup>72</sup> Mabee, *The Seaway Story*, 61 (emphasis added).

<sup>73</sup> International Deep Waterways Association, *Proceedings of the First Annual Convention*, 10.

<sup>74</sup> *Ibid.*, 20.

core of the Seaway movement retained a belief in eliminating waste and maximizing utility by expanding the navigable capacity of the Great Lakes-St. Lawrence.

This developmentalist ethos also took root in institutions and across borders. Progressives sought to join conservationism with diplomacy to address boundary resource issues on a bi-national scale. Progressive conservationists recognized an incongruity between the political entities responsible for managing natural resources and an environment that transgressed political boundaries; and they sought to address this incongruity through conservation diplomacy, specifically deployed in the Canadian-American context. Diplomats and managers from both countries began to craft a new envirotechnical regime that normalized and privileged certain uses of the boundary waters. They evinced a specific hierarchical vision of these waters, in order of importance, as reservoirs for domestic consumption, highways of commerce, sites for hydroelectric production, and stores for irrigation. This regime also furnished diplomatic mechanisms for conflict resolution based on claims of objectivity and expertise, and entrenched a set of predetermined conservation principles to govern use.

Previous chapters explored the competitive, nation-building impetus that underscored 19<sup>th</sup> century waterway developments in the Great Lakes-St. Lawrence Basin; but by the early 20<sup>th</sup> century, waterway advocates significantly revised the discourse surrounding the further development of these waters. Many of these waterway enthusiasts endorsed the idea of cooperative, bi-national management and development, and proposed strategies to facilitate Canadian-American collaboration. After several false starts, conservationists and diplomats enshrined this willingness to cooperate in the Boundary Waters Treaty of 1909 and concomitant establishment of the IJC. Ostensibly,

this new management regime would transcend the parochial, nationalistic perspectives that encouraged competitive resource exploitation, and inaugurate a dispassionate, bi-national view of boundary water governance and conservation. However, as this chapter has demonstrated, the demarcation between expertise and advocacy is not easily parsed. Despite the appearance of objectivity, the IJC's operation and recommendations were profoundly political and socially contingent. The Commission's mandate explicitly privileged some uses while marginalizing others, and its commissioners did not tackle boundary water issues in a political or social vacuum. For example, James Tawney, the first American chairman of the IJC, directly engaged Seaway advocates, tacitly supported their cause, and covertly advanced their agenda. Tawney's actions illuminate the facade of disinterested expertise and nonpartisan judgment that underpins the IJC's epistemic authority.

However, I do not mean to understate the importance or novelty of the IJC. Unquestionably, the Commission's establishment and early operation marks a watershed moment in the revision of the discourses and practices that inform boundary resource management and Canadian-American diplomacy. The IJC inaugurated bi-national management and established a venue for direct Canadian-American interaction. In short, it laid the institutional groundwork for the emergence of a transnational envirotechnical regime that structured the uses and development of the boundary waters. However, this chapter begins to explore its role as a producer and disseminator of transboundary environmental knowledge, and problematizes the construction of that knowledge. Setting the IJC's expertise and early operation in its social and political context illuminates contemporary influences, priorities, and values. It reveals the vision that the IJC's

progenitors and commissioners maintained of the boundary waters, and extends the possibility of exploring alternative visions of the same spaces.

Seaway advocates also had an abstracted view of the boundary waters. They saw the Great Lakes and St. Lawrence as “highways of commerce” and sought to augment their navigable capacity. When confronted with an alternative conception of these waters as sites of hydroelectric production, they slowly modified their vision to incorporate waterpower as an ancillary use and potential cash register for their ambitions. Seaway advocacy evolved with the changing contexts of uses, management regimes, and politics. For example, the Great Waterways Union sought to capitalize on enthusiasm for increased power production and public ownership, and, in tandem with sympathetic political leaders in the United States, availed themselves of new diplomatic avenues to advance their objectives.

This chapter described a cast of historical actors at the highest levels of government, bi-national bureaucracy, and leaders of the conservation and Seaway movements. As described, all of these actors exhibited an abstracted view of the boundary waters that accentuated certain uses and eschewed others. The conservation ethos that informed many of these actors’ perspectives tended to emphasize utility and efficiency over aesthetic or recreational considerations, but these concerns were not mutually exclusive. When discussing the Alcoa proposal, I attempted to also capture local perspectives that articulated alternative conceptions of value, use, and knowledge of the boundary waters. Locals from communities adjacent to the Long Sault Rapids described their tactile, generational, and embodied knowledge of the river. Their lives were inextricably entangled with these waters. As a space where they deployed their

productive energies and as a landscape they consumed everyday, the river was an active participant in local lives. They did not see the river through a lens of abstract possibilities or as Nature's unfinished canvas, waiting to be completed by men of vision. The river was a part of their day-to-day lives and spatial practice – they understood it through immediate and tactile experience. In the case of the Alcoa proposal, local protestations converged with navigation interests, jurisdictional ambiguity, and nationalistic apprehension that forestalled the company's plans. But, as we shall see, this simply postponed a deluge that irrevocably disrupted their lives.

The Alcoa episode also reveals an unconsolidated bi-national envirotechnical regime. The critique of capitalist machinations, foreign or domestic, and the questioning of expert opinion in the face of local knowledge demonstrate that the emerging discourses and concerns of the regime had not been wholly integrated into the political establishment on either side of the border. For the moment, competing concerns and discourses prevailed, and local concerns dovetailed with navigation interests.

Another actor in the story is the river itself, and in this chapter I explicitly focused on navigation's perennial problem – ice – to demonstrate the river's unpredictability and active participation in the narrative. The types of ice can be categorized, its characteristics described, and its seasonality determined, but it remains somewhat intangible. Professor Barnes aptly described this in the quote at the chapter's outset.<sup>75</sup> While the present and previous chapters focus on advocates and individuals who devised new mechanisms and institutions to manage the boundary waters, it is worth remembering this “natural environment” is both a social construct, a technologically mediated space, and something that continues to elude complete human control – an

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<sup>75</sup> White, *Long Sault Rapids, St. Lawrence River*, 259.

evolving set of envirotechnical systems. The boundary waters are an intensely managed environment, but not a thoroughly dominated one.

In sum, this chapter presented a range of actors struggling to define and enshrine their visions of the proper uses and management of the Great Lakes-St. Lawrence waters at the bi-national scale. Conservationists and deep waterway enthusiasts succeeded in constructing institutions that began to structure an envirotechnical regime that entrenched their vision and buttressed their goals, most evident in the promulgation of the Boundary Waters Treaty. However, as we will see, the Treaty and IJC did not displace all nationalistic sentiment or competition, but it fostered institutional space where the management and development of the boundary waters could be cooperatively approached. Moreover, when officially engaged to investigate the Seaway, the IJC also lent epistemic authority to the plans of Seaway advocates.

This chapter ends with the First World War, but the pages that follow explore the formation and activities of the most influential group of Seaway advocates, the opposition they encountered, the IJC's official Seaway investigation, and the continuing political saga surrounding the project. The waters of the Great Lakes and St. Lawrence continued to ebb and flow, as did the fortunes of those seeking to transform them in the interest of a more navigable future.

## Chapter Four

### *Selling the “Seaway”*

“The PROMISE of the FUTURE rests upon... GREAT LAKES NAVIGATION.”

– *Charles P. Craig, 1919*

“The St. Lawrence is a great Canadian asset; it is also an imperial asset, and must be wholly under [Canadian] control”

– *Frederick George Scott, 1921*

“Whereas: [the St. Lawrence route] would divert the commerce of the Great Lakes from its natural course, cause great confusion to established business and result in irreparable injury to the State of New York, its ports and business interests

Resolved: that the legislature of the State of New York emphatically disapproves the proposed St. Lawrence ship canal project.”

– *New York State Assembly and Senate, 1920*

“The Commission finds nothing in the evidence to warrant the belief that ocean-going vessels of suitable draft could not safely navigate the waters in question as well as the entire waterway from the Gulf of St. Lawrence to the head of the Great Lakes, or that such vessels would hesitate to do so if cargoes were available.”

– *The International Joint Commission, 1922<sup>1</sup>*

The quotes above are selected from the pages below to illustrate the variegated perspectives expressed in the renewed Seaway debate in the wake of the First World War. The Seaway idea inspired hope and fear, and engendered organizations dedicated to advocating or opposing its materialization. In the 1890s, the IDWA confronted sources of opposition and instigated a “counter-propaganda” campaign. The IDWA did not collapse from external and resolute opposition but from the incongruity of its constituents’ interests held together in fragile union. Nevertheless, in their brief

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<sup>1</sup> These quotes are taken from the following sources, respectively: Charles P. Craig, “Bringing the Atlantic to the Heart of the Continent,” Duluth, MN: Northeastern Minnesota Historical Center (hereafter NEMHC), *Great Lakes-St. Lawrence Tidewater Association Records* (hereafter GLSLTA), Collection #S3040, Box 28, Folder 9, “Publications and Pamphlets – Charles P. Craig, 1919-1932;” Frederick George Scott, *Toronto Globe*, July 19, 1921, 5; GLSLTA, “The Way to the Sea: ‘NONSENSE’.” *Bulletin No.26*, March 1925, NEMHC, *GLSLTA Records*, Collection #S3040, Box 28, Folder 12, “Bulletins, 1919-1934;” International Joint Commission, *Report on the St. Lawrence Navigation and Power Investigation* (Washington: GPO, 1921), 176.

existence, they reconfigured the terms of Seaway discourse by focusing on collaboration not competition, across transportation modalities and national boundaries.

This chapter traces the evolution and activities of a prolific but ultimately abortive Seaway movement between the two world wars. The First World War exacerbated basic deficiencies in continental transportation and power networks and heightened debates surrounding water-based navigation and hydroelectric facilities. The establishment of the Great Lakes-St. Lawrence Tidewater Association (GLSLTA) contributed to these debates and reconfigured Seaway advocacy, giving it new institutional expression, leadership, and dynamism. The GLSLTA was the largest and most politically influential Seaway lobbying organization and this chapter draws extensively from the records they left behind.<sup>2</sup> The following pages describe the Association's emergence, structure, activities, and interactions with institutions at the bi-national, federal, and sub-federal levels.

In the face of hostility and widespread indifference, the Tidewater Association sought to build a bi-national coalition in support of the Seaway idea. Although they failed to instigate physical construction, their efforts are remarkable. The Association took a project with limited, regional appeal and sold it as a project that corresponded with the interests of two nations. To this end, they cultivated the endorsement of the IJC and Joint Board of Engineers (JBE), which provided conceptual and epistemic cover for their ambitions.

The Seaway idea continued to draw strength from the conservation movement, and advocates readjusted how they framed arguments and calculated what would amplify their appeal. For example, the inclusion of hydroelectricity in their plans shows an

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<sup>2</sup> Their records are found at the Northeastern Minnesota Historical Center in Duluth, MN, see the following collection: NEMHC, *GLSLTA Records*, Collection #S3040, Boxes 1-32.

adaptive movement augmenting its popular and political appeal. Although the prevailing institutional regime endorsed their plans and lent them epistemic authority, the Seaway fundamentally remained a political question, inextricable from its political context. Sectional conflict, bi-national consternation, and entrenched competing systems served to undermine the Seaway's political fortunes.

The Association's activities provoked opposition on a number of fronts, and this chapter sets the Seaway question in the context of detractors' rejoinders. In the course of its investigation, the IJC held a series of 46 public hearings that prominently featured debates between Seaway proponents and opponents. An assorted cast of political actors carried this dialogue forward through the interwar period. One discursive product of this dialogue is the term "Seaway" itself, which first appeared in 1921. A deceptively simple etymological intervention with exceptional discursive power, the Seaway moniker captured the idea succinctly and provided a discursive axis around which relevant actors rallied or rebelled.

Boundary resource politics and conservation diplomacy continued to transform the relationship between Canada and the United States, and the Seaway became a focal point of these discussions. In the end, the success or failure of the idea turned on advocates or opponents' ability to mobilize political and social forces to their cause. Seaway opposition managed to coalesce a more powerful assortment of actors to temporarily defeat the proposal.

All the while, both nations continued to transform the Great Lakes-St. Lawrence system, and the system reciprocally transformed them. As they projected their hopes and

fears onto the river, the river continued to inform politics, identities, and social interactions.

### Wartime Conservation

The war engendered significant power shortages on both sides of the national border, especially following America's military participation. The foregoing chapter described Alcoa's successful application to the IJC to construct an underwater weir to augment Long Sault power production, as well as the Canadian government's counterproposal to comprehensively develop the river's navigation and hydroelectric capacities. Alcoa's modest amplification did not substantially diminish widespread shortages and blackouts that nearly precipitated a Canadian-American electric conflict. For example, Ontario Hydro's chairman, Adam Beck, threatened to stop exporting power to the United States from the utility's facilities at Niagara Falls, but federal officials persuaded him to find a less confrontational approach.<sup>3</sup> Pervasive shortages and the specter of electrical protectionism called attention to the thousand of kilowatt-hours "going to waste" along the St. Lawrence, rekindled interest in comprehensive development, and remobilized private enterprise covetous of the St. Lawrence's energy.<sup>4</sup>

The notion that the river's potential energy was "going to waste" illustrates the continuing influence of conservationist thought. Not traditionally thought of as a vehicle for conservationism, the First World War provided opportunities for the implementation of conservationist ideals under extraordinary circumstances. Railroad reorganization and

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<sup>3</sup> Various letters exchanged between Robert Borden and Adam Beck between July 3, 1917 to March 8, 1918, LAC, *Sir Robert L Borden fonds*, MG26-H (R6133-0-X-E), Vol.222, No.1643, Reel C-322, 124629-124728, "Export of Electricity, 1917-1918."

<sup>4</sup> The "going to waste" comment is taken from: Willoughby, *The St. Lawrence Waterway*, 86-87. The references to growing interest in comprehensive development and to private companies seeking special concessions alludes to the Canadian counterproposal to the IJC's approval of Alcoa's weir and to the Alcoa plan, respectively.

increased state influence over production lent significant state power to the promotion of efficiency and elimination of waste. The superlative example is the United States Food Administration, led by Herbert Hoover, which engaged in an extensive program that employed direct federal control, promoted volunteerism at all scales of production, and engaged in an extensive propaganda campaign that linked food and resource conservation with patriotism.<sup>5</sup> This mix of government coercion – the Administration fixed prices, bought and distributed wheat, sugar, and other foodstuffs – and volunteerism yielded dramatic results.<sup>6</sup>

The Food Administration's activities illustrate the fact that conservationism did not take a hiatus during the war effort. In fact, the exigencies of war provided an opportunity to test and implement conservationist ideas and practices at multiple scales, and enlist government agencies along with individual actors to the resource conservation and waste elimination cause.

Following the war, transportation and energy deficiencies persisted. Railcars loaded with grain and flour stood on eastern cities' sidetracks for "days and weeks and often months without being moved, due to congested terminals."<sup>7</sup> Following the dissolution of the U.S. nationalized network, railroads increased their rates to recapture lost revenue. This precipitated renewed disaffection, especially in the Midwest, and

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<sup>5</sup> Empowered by the Lever Act of 1917 and Executive Order (2679-A), the Food Administration assured the supply, distribution, and conservation of food during the war. The Lever Act (Food and Fuel Control Act) became law in August of 1917 (40 Stat. 276), which empowered the president to take steps to assure the nation's and war effort's food supply. President Wilson issued the executive order creating the Food Administration on August 10, 1917.

<sup>6</sup> The Food Administration enlisted private, voluntary endeavors to advance its conservation agenda. For example, Charles Lathrop Pack's National War Garden Commission, which encouraged citizens to plant "War Gardens." Pack foresaw a transition from War Gardens to "Victory Gardens," and local gardening as integral to postwar conservation. See: Charles Lathrop Pack, *The War Garden Victorious* (Philadelphia: J.B. Lippincott Company, 1919), 24. Also see a biography of Pack: Alexandra Eyle, *Charles Lathrop Pack: Timberman, Forest Conservationist, and Pioneer in Forest Education* (Syracuse, NY: SUNY-ESF, 1992).

<sup>7</sup> A.P. Nelson (R-WI) quoted in: United States, Congress, House of Representatives, *Congressional Record*, 66 Congress, 2 Session (March 19, 1920), 4616.

refocused attention on alternative modes of transportation. Augmenting this discontent, the opening of the Panama Canal, in August 1914, underscored the transportation disadvantages felt in the Midwest. In terms of transportation costs, the Canal moved the west coast closer to the eastern seaboard by one-third. For example, it became cheaper to ship steel from Baltimore to San Francisco by way of the Panama Canal than to ship steel from Pittsburgh to Chicago by rail.<sup>8</sup> This is a useful reminder of capitalism's persistent compression of time and space. In terms of relational space, based on shipping cost, not physical distance, the east and west coasts became closer to one another than many places situated in the Midwest.<sup>9</sup>

These circumstances reinvigorated enthusiasm for the Seaway idea in the Midwestern United States and Ontario. Renewed political energies channeled into the most prolific and influential incarnation of organized Seaway advocacy – the Great Lakes-St. Lawrence Tidewater Association.

### Seaway Advocacy Renaissance

The origin of this third generation of the Seaway movement can be fixed to a single date – January 2, 1919. More specifically, we can trace it to an *ad hoc* speech made at a dinner for the commercial elite of Duluth, MN.<sup>10</sup> Charles P. Craig, a wealthy lawyer, former President of the Duluth Chamber of Commerce, and a leader of the Midwestern drive for railroad rate reduction gave the speech in question.

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<sup>8</sup> This illustration is given in: Willoughby, *The St. Lawrence Waterway*, 84.

<sup>9</sup> For a discussion of relational space and the railroads see: Richard White, *Railroaded: The Transcontinentals and the Making of Modern America* (New York: W.W. Norton, 2011), 142-151.

<sup>10</sup> Details of this dinner, called “Over the Top” were taken from a form letter written by: Charles P. Craig on December 24, 1918, “No title,” NEMHC, *GLSLTA Records*, Collection #S3040, Box 1, Folder 8, “General Correspondence, Canada – Wisconsin, 1918.”

Ironically, Craig did not intend his remarks to be the event's main attraction. As the organizer, Craig entreated prominent public figures and advocates from Seaway movements past to attend, speak, and offer input. He corresponded with Senator Townsend of Michigan, whom Craig heralded as the "father" of the lakes-to-ocean movement; Daniel B. Detweiler of the Great Waterways Union; S.A. Thompson, nicknamed "Deep Water" Thompson, the Secretary of the National Rivers and Harbors Congress; James A. Tawney, the American chairman of the IJC; Frank Keefer, a Canadian Member of Parliament; U.S. Senator Knute Nelson of Minnesota and Senator Irvine Lenroot of Wisconsin; along with members of the Chicago Association of Commerce, most notably Horace C. Gardner.<sup>11</sup> Citing various reasons, all these parties politely declined Craig's invitation, but their replies offered advice, gestures of support, and statements of encouragement.<sup>12</sup> The archival record indicates that Craig corresponded extensively with many earlier advocates, engaging and procuring a form of institutional memory. He also wrote to archivists, librarians, and members of past waterway commissions in search of material about earlier advocacy efforts, and he solicited updates on ongoing projects from the engineer-in-charge of the Welland

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<sup>11</sup> Correspondence with all of these individuals can be found in: NEHMC, *GLSLTA Records*, Collection #S3040, Box 1, Folder 8, "General Correspondence, Canada – Wisconsin, 1918."

<sup>12</sup> For example, Senator Townsend praised Craig's interest, furnished information, and referred him to the "live wire" Detweiler as a potential Canadian counterpart and valuable correspondent. Detweiler could not attend the dinner, citing poor health – he died later that year – but sent a telegram to be read on the occasion, and the two men corresponded frequently before Detweiler's passing, see: Townsend to Craig, December 27, 1918, NEMHC, *GLSLTA Records*, Collection #S3040, Box 1, Folder 8, "General Correspondence, Canada – Wisconsin, 1918;" and See: "Correspondence with Daniel B. Detweiler," NEMHC, *GLSLTA Records*, Collection #S3040, Box 1, Folder 12, "General Correspondence, California – Ohio, 1919."

expansion and the Harbour Commissioners of Montreal.<sup>13</sup> In fact, it seems that Craig wrote to just about anyone with a connection or possible interest in the Seaway idea.

Craig's dinner speech – “Bringing the Atlantic to the Heart of the Continent” – was a resounding success. In his talk, Craig charged that the “inland seas” should be made “ONE HUNDRED PERCENT EFFICIENT;” and he identified two principle problems:

- 1) The complete divorcement of Great Lakes transportation from railroads
- 2) Connecting the Great Lakes with tidewater via the St. Lawrence<sup>14</sup>

Craig unequivocally pressed these two points; he spoke at length about their history, present state, and possible resolution. On the first front he pleaded for a “RAIL AND WATER movement not Railways vs. Waterways,” and suggested the establishment of a federal institution to coordinate their integration. On the second point he made a more grandiose claim: “the PROMISE of the FUTURE rests upon... GREAT LAKES NAVIGATION.” To secure this promise and future, he suggested that advocates renew the pursuit of an IJC investigation. He also noted a more favorable climate for Canadian cooperation: “A marvelous historic epochical [sic] consequence of our NEW relations with Canada growing out the world war must not fail to be the CONNECTING of the

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<sup>13</sup> For example, he corresponded extensively with J.A. Mitchell of the Public Archives of Canada, who found copies of the proceedings of the IDWA in the Toronto Repository. See: Charles P. Craig to J.A. Mitchell, Public Archives of Canada, various dates, 1919, *GLSLTA Records*. NEMHC. Collection #S3040, Box 1, Folder 11, “Correspondence - Canada, 1919.” For his attempts to solicit updates on ongoing projects see: *GLSLTA Records*. NEMHC. Collection #S3040, Box 1, Folder 1, “General Correspondence, Canada – Wisconsin, 1918.”

<sup>14</sup> All the upper case emphasis is Craig's. A copy of this speech, given to the “Allied Civic Organizations of Duluth”, can be found in: Charles P. Craig. “Bringing the Atlantic to the Heart of the Continent.” *GLSLTA Records*. NEMHC. Collection #S3040, Box 28, Folder 9, “Publications and Pamphlets, Charles P. Craig, 1919-1932.” A copy is also available in: Canton, NY: St. Lawrence University, Special Collections and Vance Archives (hereafter SLU), *Seaway Collection*, Collection No.40, Reed Series, Box 92, Folder 6, “Additional Speeches and Addresses.”

GREAT LAKES with the tide water and their DEVELOPMENT for OCEAN TRAFFIC.”<sup>15</sup>

Encouraged by the response he received in Duluth, Craig took his new Seaway show on the road. He traveled to a waterway conference in Minneapolis, turned his speech into an advocacy pamphlet that attached excerpts from his correspondence, and formally requested that the governors of the Great Lakes states send delegates to Washington, DC for a Seaway meeting. Held in room 1003 of the New Willard Hotel in February 1919, the meeting’s participants met with the express purpose of establishing “an organization to deepen the present navigable waters and create a channel to admit boats from Montreal to Duluth at the western end of Lake Superior... to admit the passage of boats 800 feet in length drawing thirty feet of water.”<sup>16</sup> After a vote on permanent organization, this became the inaugural meeting of the Great Lakes-St. Lawrence Tidewater Association, the chief instrument for Seaway advocacy for the following 16-years.

Charles P. Craig pressed the Seaway cause with a zeal and energy unseen since William Hamilton Merritt. At the time of his Duluth speech, Craig was 60-years old, and until the end of his life, in 1935, he remained the lynchpin and engine of the Seaway movement. The Washington meeting’s delegates designated Craig as the Tidewater Association’s Executive Director and Vice President at Large, which, in his opinion, made him the boss. Horace C. Gardner, a mild-mannered engineer from Chicago – later

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<sup>15</sup> Charles P. Craig, “Bringing the Atlantic to the Heart of the Continent,” NEMHC, *GLSLTA Records*, Collection #S3040, Box 28, Folder 9, “Publications and Pamphlets, Charles P. Craig, 1919-1932” (his emphasis).

<sup>16</sup> The meeting was held on February 4, 1919. “Great Lakes-St. Lawrence Tidewater Association, Report of Minutes, February 4, 1919,” NEMHC, *GLSLTA Records*, Collection #S3040, Box 25, Folder 8, “Executive Committee Minutes.”

called a “benign conciliatory figure” – became the organization’s president.<sup>17</sup> The Association drew its executive officers from across the Great Lakes states, and each participating state received delegates on a “Council of States” that oversaw Association policies and activities.

Craig devised an unusual membership device for the GLSLTA. The Association admitted states not individuals as members, and state legislatures appropriated contributions to the GLSLTA – beginning with \$12,500 each from Michigan, Wisconsin, and Minnesota – instead of levying dues from individual constituents.<sup>18</sup> The Association began with six member states – Michigan, Minnesota, Wisconsin, Illinois, Ohio, and Indiana – they quickly added five more – Iowa, North Dakota, South Dakota, Montana, and Idaho – and reached a height of 23 member states in 1928.<sup>19</sup> Craig insisted on a position of neutrality in certain political and ideological debates so that the organization could maximize its popular appeal. The GLSLTA would not endorse any political party, take no position on public or private ownership of hydroelectric facilities or distribution of electricity, and would not engage in political logrolling or *quid pro quo* arrangements. These non-partisan tenets derived from Craig’s desire to avoid political quagmires that he believed would inevitably sap the movement’s time, strength, and political capital.<sup>20</sup>

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<sup>17</sup> Mabee, *The Seaway Story*, 63; Stagg, *The Golden Dream*, 113.

<sup>18</sup> The association spent an aggregate sum of more than \$560,000 between 1919 and 1933. Great Lakes-St. Lawrence Tidewater Association, *The St. Lawrence Seaway: A Review of Minnesota’s Participation in the Movement to Open the Great Lakes and the St. Lawrence River to Ocean-borne Traffic* (Washington: The Association, 1939), 10.

<sup>19</sup> After the first eleven members, admitted in 1919, Nebraska, Colorado and Wyoming were admitted in 1920; Kansas in 1921; Utah, Oregon, Missouri, South Carolina, West Virginia, and Kentucky in 1926, followed by Washington and California in 1928. For the membership list see: “Articles of Association: With Amendments,” N.D., NEMHC, *GLSLTA Records*, Collection #S3040, Box 25, Folder 8, “Executive Committee Minutes.”

<sup>20</sup> “Minutes of the Executive Council, April 28, 1919,” NEMHC, *GLSLTA Records*, Collection #S3040, Box 25, Folder 8, “Executive Committee Minutes.”

The Association drew on conservationism by foregrounding statistical and technical data and crafting their arguments in consonance with the ideals of efficiency and the elimination of waste, not just political or sentimental appeal. They framed their central arguments for the expansion of this waterway in relation to a set of presumed dispassionate truths, and sought the sanction of bi-national expertise and authority. Their frequent invocation of the “natural” character of the St. Lawrence did not reflect a concern with its ecological or aesthetic preservation, but argued its superiority over alternatives.

The Association’s structure crafted an exclusively American organization with an international objective. To address this dissonance, in November 1919, Craig participated in a meeting at Windsor, Ontario with the express purpose of establishing a Canadian correlate to the GLSLTA – named the “Canadian Deep Waterways and Power Association” (CDWPA).<sup>21</sup> Frank Keefer, Canada’s Undersecretary for External Affairs and Craig’s most trusted Canadian ally, also attended the conference, as did many supporters of Daniel Detweiler’s defunct Great Waterways Union. Like its predecessor, the CDWPA drew most of its support from Southwestern Ontario, and installed Oscar Ernest Fleming, a wealthy, former Conservative mayor of Windsor as its president.

The Canadian association never possessed the drive or energy of its American counterpart. Adam Beck provided most of the dynamism surrounding the Canadian organization. At the inaugural meeting, Beck detailed the power potential of the St. Lawrence and suggested that the production of electricity could pay for the entire navigation and power project – a “cash-register” strategy pervasive in the American west.

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<sup>21</sup> See the correspondence between Craig, members of the conference’s organizing committee, and its eventual President Oscar Ernest Fleming, in: NEMHC, *GLSLTA Records*, Collection #S3040, Box 1, Folder 18, “Correspondence, Canada, Windsor, 1919.”

Power-can-pay rhetoric became the *lingua franca* of American and Canadian advocates. Beck eventually became disillusioned with the CDWPA, and accused it of parroting the Tidewater Association and focusing on navigation to the detriment of power development.<sup>22</sup> He was not wrong. The two organizations worked closely with one another by establishing a joint committee to coordinate their efforts and disseminating the same propaganda material. When political support waned in Canada, the American organization even covertly financed its Canadian counterpart.<sup>23</sup>

A torrent of Seaway propaganda followed. Advocates gave speeches, wrote editorials, gave interviews to newspapers, held conferences, and wrote politicians and bureaucrats to win their support. In September 1919, the Tidewater Association began to publish a regular bulletin called *The Way to the Sea* that reported on the movement's activities, updated the Association's membership on Seaway developments, and circulated positive feedback, statements of encouragement, as well as refutations of opponents' arguments.<sup>24</sup> The bulletin had wide distribution and the Association sent it to any potentially interested party, often without solicitation.

With these two organizations in place, the Seaway advocacy movement found institutional expression and reinvigoration on both sides of the border. Craig and his allies crafted and entrenched machinery to disseminate information and propaganda, and to lobby for the Seaway. Craig's Seaway activities began by appropriating the cumulative experience of earlier advocates – an intergenerational knowledge transfer.

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<sup>22</sup> Stagg, *The Golden Dream*, 114.

<sup>23</sup> The establishment of the joint committee is discussed in: "Executive Director Progress Report #6, November 24, 1919", NEMHC, *GLSLTA Records*, Collection #S3040, Box 25, Folder 17, "Executive Director Reports." We will return to the issue of covert financing below.

<sup>24</sup> The "Way to the Sea" Bulletin had 53 separate editions between September 1919 and March 1933, and are available in the Library of Congress under the call number TC 623.1 .G6 Nos.1-53; as well as in: NEMHC, *GLSLTA Records*, Collection #S3040, Box 28, Folders 12-13, "Bulletins, 1919-1934."

Now, he set out to build on their efforts and succeed where they failed. Prior to the First World War, Seaway proponents had stood at the precipice of initiating an IJC investigation, and this new postwar incarnation of the movement assumed their mantle and the same immediate goal.

*Enlisting the International Joint Commission*

The foregoing chapter described the IJC's first direct interactions with the Seaway idea, problematized the pretense of impartiality and obscured the boundaries between advocacy and expertise. However, the IJC's wartime approval of Alcoa's weir and increased diversion of St. Lawrence water placed it in an ambiguous position relative to Seaway advocates. The Seaway movement needed and actively cultivated the IJC's endorsement of their aspirations. A favorable report by the IJC would imbue the Seaway proposal with scientific and economic legitimacy, provide political cover under the auspices of expert approval, and augment movement's propaganda arsenal. Past experience suggested that the IJC would be sympathetic to the Seaway cause, but Craig took every opportunity to press their case and gauge the IJC's disposition.

Through Senators Lenroot (R-WI) and Kellogg (R-MN), Craig pressed for an investigation.<sup>25</sup> In the Senate Committee on Interstate Commerce, Lenroot and Kellogg introduced an amendment to the Rivers and Harbors Bill of 1919 requesting that the IJC, under article IX of the Boundary Waters Treaty: "investigate what further improvement of the St. Lawrence River between Montreal and Lake Ontario is necessary to make the same navigable for ocean going vessels, together with the estimated cost thereof... and report... with its recommendations for cooperation by the United States with the

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<sup>25</sup> "I.L. Lenroot to Craig, March 15, 1919," NEMHC, *GLSLTA Records*, Collection #S3040, Box 2, Folder 23, "General Correspondence, Ohio, Toledo – Wyoming, 1919."

Dominion of Canada in the improvement of the said river.” The amendment passed the Senate by a vote of 43 to 18 in February 1919. When President Wilson signed the Rivers and Harbors Bill into law twelve days later, the Tidewater Association secured its first major political victory.<sup>26</sup>

The State Department promptly invited Ottawa to reciprocate through the British Ambassador in Washington.<sup>27</sup> Frank Keefer lobbied Prime Minister Borden to accept the American invitation, made the familiar argument that the St. Lawrence should be deepened to correspond with the Welland, and invoked a conservationist line that argued against the “poor economy” of importing and depleting massive quantities of coal, while the power resources of the St. Lawrence remained undeveloped. Loring C. Christie, the Department of External Affairs’ legal advisor and one of Borden’s most trusted officials, pointed out that Canada’s repeated insistence on comprehensive development during the Alcoa weir controversy left them open to accusations of “something verging on bad faith,” should they reject the invitation.<sup>28</sup>

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<sup>26</sup> This was one of several amendments added in committee, passed on February 18<sup>th</sup> and signed by Wilson on March 2, 1919: United States, Senate, Committee on Interstate Commerce, Duncan Upshaw Fletcher, *Rivers and Harbors Appropriation Bill*, Senate Report 665, 65 Congress, 3 Session (January 27, 1919), 1-16. Also see: United States, Congress, Senate, *Congressional Record*, 65 Congress, 3 Session (January 27, 1919), 2104. Most of the amendment’s support came from Midwestern, Western and Southern Senators; the opposition came primarily from the East. For the vote and debate, see: United States, Congress, Senate, *Congressional Record*, 65 Congress, 3 Session (January 27, 1919), 3347-48, 3663-77. When signed by the President the bill became 40 Stat. 1290.

<sup>27</sup> The State Department sent the relevant section (section 9) to be transmitted to Ottawa, and followed this communication with second transmission ten days later. Curiously, the second note did not refer to Section 9 of the Rivers and Harbors Act of 1919, but to a State Department note dated February 24, 1914. The second note contained a more expansive reference that requested an IJC Commission investigation of the comprehensive development of the St. Lawrence and Great Lakes, from Montreal to the headwaters of Superior. This second note inquired if the Canadian government would consent to an IJC study of the entire system, and if not, would they agree to the River and Harbors Act’s more limited terms of reference? See: United States, State Department, *Papers Relating to the Foreign Relations of the United States*, 1920, I (Washington, DC: GPO, 1935), 409.

<sup>28</sup> For the Keefer’s comments see: Keefer to Borden, April 15, 1919; and Keefer to Borden, May 20, 1919; for Christie’s suggestion see: “L.C. Christie Memo,” July 15, 1919, LAC, *Sir Robert L Borden fonds*, MG26-H (R6133-0-X-E), Vol.184, No.2907, Reel C-4418-9, 139236-139319, “St. Lawrence River Development, 1919-20.”

Borden agreed with this assessment, but expressed concern that the investigation could exacerbate geographic divisions and incense Canadian nationalists. He also had to contend with the lingering jurisdictional dispute between the federal government and Ontario Hydro over who had the right to develop the St. Lawrence's hydropower.<sup>29</sup> Despite these concerns, Borden decided to accept the IJC invitation, but only endorsing a restricted reference that covered the section between Lake Erie and Montreal, because a broader scope might arouse the opposition from eastern railroads, seaboard harbors, and those involved with the Chicago Drainage Canal – which it did, regardless of the investigation's scope.<sup>30</sup>

In late July 1919, the British embassy in Washington informed State Department officials that Canada had agreed to jointly refer the “improvement” of the St. Lawrence to the IJC for investigation. To collect and furnish technical data to inform the IJC's decision, in early 1920, the two governments created an advisory, Joint Board of Engineers, led by Colonel W.P. Wooten of the Corps of Engineers and W.A. Bowden the Department of Railways and Canals' chief engineer.

Reciprocal initiation of the IJC investigation was a crucial moment in the Seaway narrative, and, more immediately, an important victory for advocates. It set the stage for

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<sup>29</sup> J. Castell Hopkins, *Canadian Annual Review of Public Affairs, 1920* (Toronto: The Annual Review, 1921), 567.

<sup>30</sup> At first, Keefer advised Borden to “deal with the whole matter instead of piecemeal”, but on further reflection reversed this opinion. He recommended that Canada accept the more restricted reference. He claimed that examining the whole system would be more expensive and time-consuming, and might delay sanctioned work between Montreal and Lake Ontario. Thus, Keefer proposed following the “line of least resistance” and endorsed the less ambitious reference. He argued that once the Welland and St. Lawrence canals accommodated ocean traffic, he argued, the connecting channels between the lakes would soon follow. The first quote [dealing with the whole matter] is taken from a letter: Keefer to Borden, April 15, 1919; Keefer's reversal of opinion and justifications are given in: Keefer to Borden May 20, 1919, LAC, *Sir Robert L Borden fonds*, MG26-H (R6133-0-X-E), Vol.184, No.2907, Reel C-4418-9, 139236-139319, “St. Lawrence River Development, 1919-20.”

expert and bi-national sanction of the idea, identified parties on both sides of the question and across political boundaries, and it informed the parameters of subsequent debate.

*The International Joint Commission: Investigation*

The two nations referred nine questions to the IJC. The questions were: what infrastructure need to be constructed to allow deep-draft vessels to navigate into Lake Ontario, in what arrangement, and to what depth; what role hydropower should play in the scheme; how should the project should be administered, and in what order should the improvements be carried out; how much would it cost, and how should the cost be allocated to the two countries; what resources, commercial, and industrial benefits would accrue; and how much traffic would it likely carry?<sup>31</sup> The terms of reference clearly indicated that the two governments wished to secure “from the waters of the upper St. Lawrence their *maximum efficiency* in navigation *and* power.”<sup>32</sup> The language of these terms of reference and direct emphasis on maximizing efficiency demonstrates the continuing influence of conservation discourse and doctrine on the diplomatic resolution of boundary resource questions.

In order to answer these questions the Commission had to sift through all possible evidence related to both the engineering and economic aspects of the proposal. As the JBE collected technical data, the IJC held sessions to solicit economic data. Despite the Canadian government’s acceptance of the more restricted reference, the IJC claimed “no intelligent consideration could be given... without... taking into account the whole system of the Great Lakes and their outlet to the Sea... [as well as areas] economically

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<sup>31</sup> The specific terms of the reference can be found in: International Joint Commission, *Report on the St. Lawrence Navigation and Power Investigation*, 9-10.

<sup>32</sup> *Ibid.*, 11.

tributary to the Great Lakes.”<sup>33</sup> In short, the IJC interpreted their mandate to cover a vast geographic area, reaching far into the continent’s interior on both sides of the border. Essentially, the IJC broadened the parameters of the investigation and acted on the terms of a larger reference eschewed by Canada. The IJC justified this transgression of the more restricted terms by claiming that “intelligence” demanded an expanded geographic mandate. The Commission primarily focused on the geographic parameters delineated by the reference, but they treated the whole Great Lakes-St. Lawrence system as inextricable from the areas under direct consideration – a tacit acknowledgement of the potential geographical scope of the envirotechnical system to be constructed.

The section under specific investigation – from Lake Ontario to Montreal – is 182 navigable miles long, 46 miles of which had fourteen-foot canals and twenty-one lift locks measuring at least 270 by 45 feet. This section is typically divided into five subsections defined by geography and the national boundary. Proceeding downstream from Lake Ontario, they are: (1) the Thousand Islands, about 67 miles in length from the Lake’s to Chimney Point (adjacent to the towns of Ogdensburg, NY and Prescott, ON); (2) the International Rapids, 48 miles long with a combination of intense rapids and swift moving current from Chimney Point to the head of Lake St. Francis (at Cornwall, ON); (3) Lake St. Francis, a fluvial lake 26 miles in length; (4) the Soulanges that extended from the foot of Lake St. Francis through 18 miles of rapids to meet a second fluvial lake, Lake St. Louis; and (5) the Lachine, from Lake St. Louis through a series of rapids that extend 23 miles to Montreal’s harbor.<sup>34</sup> The first two sections of the river form the international boundary between Canada and the United States (together called the

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<sup>33</sup> Ibid., 12.

<sup>34</sup> Basic details taken from: Ibid., 21-23. Also see: Harold G. Moulton, *The St. Lawrence River Navigation and Power Project* (Washington: Brookings Institution, 1929), 26.

International Section), but beginning with Lake St. Francis the St. Lawrence flows exclusively through Canadian territory.<sup>35</sup>

The Commission first convened at Buffalo, NY on March 1, 1920, for a preliminary hearing to solicit opinions from interested parties about the scope and character of the task set before them. In the course of their investigation, the IJC arranged 46 hearings across 16 states and five provinces.<sup>36</sup>

Charles P. Craig capitalized on the Commission's many public hearings by following the Commission from place to place and organizing favorable testimony. In these efforts, Craig received direct assistance from the Wilson administration. The Secretary of Commerce, W.C. Redfield, assigned men from his department to work with the GLSLTA to prepare favorable evidence, and the Secretary of the Interior, Franklin K. Lane proclaimed: there existed "probably no more important engineering project now in view upon the continent."<sup>37</sup> The direct involvement of the American executive branch facilitated Craig's efforts to build the pro-Seaway case and present a preponderance of evidence that favored the project. Consequently, out of the scores of witnesses and data presented to the IJC the vast majority supported the Seaway.<sup>38</sup>

The arguments that the Commission heard in favor of the scheme can be summarized into three main points. First, railroads could not adequately meet the agricultural and industrial transportation demands of the West and Midwest. This

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<sup>35</sup> See the map provided in the first chapter above on page 66.

<sup>36</sup> International Joint Commission, *Report on the St. Lawrence Navigation and Power Investigation*, 12.

<sup>37</sup> Lane to Lenroot, August 29, 1919, NEMHC, *GLSLTA Records*, Collection #S3040, Box 25, Folder 1, "Council of States, Letters to, 1919-1938." Reprinted in: GLSLTA, "The Way to the Sea: National Benefits," Bulletin No.20, November 1922, NEMHC, *GLSLTA Records*, Collection #S3040, Box 28, Folder 12, "Bulletins 1919-1934."

<sup>38</sup> For a summary of the hearings see: United States, Congress, Senate, *St. Lawrence Waterway, Improvement of St. Lawrence River from Montreal to Lake Erie*, Senate Document 114, 67 Congress, 2 Session (January 18, 1922), 155-184.

argument centered on conditions in the United States, but sometimes stretched to cover associated areas in Canada. Advocates claimed that transportation deficiencies constrained current productive capacity.

Second, proponents argued that developing the St. Lawrence would reduce transportation costs for a wide range of commodities. For example, in the movement of grain alone they estimated that producers would receive a yearly aggregate benefit that ranged from \$240 to \$366 million. Moreover, they estimated that the proposed waterway would reduce the cost of moving freight to and from the Midwest by an average of \$4 per ton.<sup>39</sup>

Finally, advocates' third argument claimed perceived advantages of developing the St. Lawrence's hydroelectric power potential. In the International Section alone, advocates presented estimates that 2,250,000 horsepower could be produced. Even the State of New York, which adamantly opposed the waterway project, supported the development of the river's hydroelectric capacity. This argument resounded most strongly in Ontario, but supporters in the Midwest, who presumably believed that the sale of power could pay for navigation works, advanced this argument. In fact, the IJC hearings mark the first time that advocates routinely deployed the hydropower argument in service of their navigable goals. The hearings also reveal the advocacy movement's regionally specific character; voices from Ontario, the Midwest, and to a lesser extent, the West are most prevalently represented in pro-Seaway testimony.

The IJC hearings also elicited testimony opposed to the Seaway scheme. Although the IJC noted that "analysis of the testimony submitted makes it clear that the consensus of opinion in the two countries... was on the whole distinctly favorable to the

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<sup>39</sup> Figures in USD. Moulton, *The St. Lawrence River Navigation and Power Project*, 5-6.

proposed improvement of the St. Lawrence,” they qualified this opinion as “far from unanimous.”<sup>40</sup> Opposition chiefly emanated from the eastern seaboard of the United States – notably port cities like Boston, New York, Philadelphia, and Baltimore – which feared a reduction in their share of the nation’s foreign trade. Buffalo objected that the project would injure its transshipment business in the grain trade. Similarly, the State of New York favored an alternative all-American route and decried the project’s adverse impact on the trade carried by the New York Barge Canal. However, the IJC dismissed much of this opposition as “local patriotism.”<sup>41</sup>

Like Buffalo, Montreal opposed the scheme based on the perceived loss of transshipment business, fearing that ocean-going ships would bypass its harbor *en route* to the interior. The IJC noted: “[on] the Canadian side, anything like general approval of the undertaking was confined to the Province of Ontario... [in] the other Provinces, public sentiment appeared to be either indifferent or more or less hostile.”<sup>42</sup> The Commission attempted to decipher this widespread Canadian indifference or hostility, and devoted a considerable amount of text to its description. They noted that many Canadian petitioners focused on alternative routes to the Sea – westerners favored a seaport on Hudson Bay, and citizens from North Bay, ON to Montreal favored a Georgian Bay route. The Commission’s report reminded its readers that for decades Canada had “pursued a definite and progressive policy of waterways improvements,” and while further deepening of the St. Lawrence presented a logical step in this program, the current system adequately served Canada’s present transportation needs. Most tellingly, the Commission observed that the distribution and density of population and industry

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<sup>40</sup> International Joint Commission, *Report on the St. Lawrence Navigation and Power Investigation*, 155.

<sup>41</sup> *Ibid.*, 158.

<sup>42</sup> *Ibid.*, 155.

differed significantly between the two countries. The Midwest and western United States, they surmised, had “compactness and uniform productiveness” not present in its Canadian geographic correlate. According to the IJC report, the Canada’s population and productive spaces served by Great Lakes transportation remained concentrated in eastern and southern Ontario as well as the prairies (Manitoba, Saskatchewan, and Alberta); and a sparsely populated region above Lakes Huron and Superior separated these denser spaces. Although rich in natural resources, this middle-ground’s population and immediate productive value remained limited, and unlike the American region tributary to the upper Lakes, this area had no pressing need or demand for increased waterway development.<sup>43</sup>

Opponents recurrently raised climatic objections to the St. Lawrence scheme over the course of the hearings – the problems of ice, fog and the seasonality of navigation.<sup>44</sup> Capts. J. Hearn, John Mercier, and J.B. Henry of Quebec challenged this widely held and professed belief: “There was no trouble with ice during the navigation season except in Belle Isle Strait, which, as a rule, was not used by freighters.”<sup>45</sup> Invoking their immediate experience, they claimed that conditions in the St. Lawrence approximated those along the New England seaboard. The Tidewater Association presented a series of maps and navigation charts to demonstrate that the St. Lawrence route compared favorably, in terms of ice and fog, with other steamer lanes between North Atlantic ports.<sup>46</sup> However, all the evidence presented in favor of the St. Lawrence route, in terms of ice and fog, was relative to other *northern* waterways. The river’s seasonality

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<sup>43</sup> Ibid., 155-158.

<sup>44</sup> For example, see the comments by Charles Chadwick of New York: Ibid., 55.

<sup>45</sup> United States, Congress, Senate, *St. Lawrence Waterway, Improvement of St. Lawrence River from Montreal to Lake Erie*, Senate Document 114, 67 Congress, 2 Session (January 18, 1922), 59.

<sup>46</sup> Articulated in testimony by R.S. MacElwee and Alfred H. Ritter. Ibid., 59.

remained inescapable. Despite a long professed belief in man's ability to "perfect" or improve nature toward human ends, advocates confronted the river's "imperfect" tendency to freeze, revealing their inability to wholly dominate nature. The system they proposed had to exist symbiotically with the river – an envirotechnical system. Consequently, Seaway proponents had to temper their discourse to obviate the challenges posed by northern climates.<sup>47</sup> The system they proposed could not escape ice, but, they claimed, would succeed in spite of it.

Finally and unsurprisingly, opposition emerged from interests associated with railroads. The Commission found the amount of testimony identifying and describing railroad congestion so overwhelming that they claimed: "it is impracticable to do anything more than identify its general trend."<sup>48</sup> However, railroad arguments did not center on the irrefutable presence of congestion, but on the St. Lawrence route's perceived ability to alleviate it. Julius H. Barnes, a prominent Seaway advocate and former President of the United States Food Administration's Grain Corporation, presented evidence drawn from wartime experience that attested to waterways' advantages in the realms of flexibility, economy, and expandability. Testimony from the Midwest and West almost universally followed this waterway line, but eastern railroads challenged this assessment.<sup>49</sup> Some railroad representatives claimed that war had produced congestion but the situation would self-correct; others argued that directing proposed St. Lawrence expenditures into existing infrastructure – i.e. railroads and the

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<sup>47</sup> For an excellent summary of their arguments on this front see: GLSLTA, "The Way to the Sea: Fog and Ice – The Mythical Hazards of St. Lawrence Route," *Bulletin No. 15*, April 1921, NEMHC, *GLSLTA Records, Collection #S3040*, Box 28, Folder 12, "Bulletins, 1919-1934."

<sup>48</sup> United States, Congress, Senate, *St. Lawrence Waterway, Improvement of St. Lawrence River from Montreal to Lake Erie*, Senate Document 114, 67 Congress, 2 Session (January 18, 1922), 68.

<sup>49</sup> *Ibid.*, 68, 71.

Barge Canal – would better serve the national transportation networks. Nisbet Grammar of Buffalo contended that the railroads should be treated more “generously” – the ICC should permit higher rail rates to encourage the improvement of rolling stock, proliferation of rails, and allow the railroads to “get control of their labor and change it back into a loyal group of employees.”<sup>50</sup>

Opponents’ chief protestation at the IJC hearings could be called a “path dependence” argument.<sup>51</sup> For example, William McCarroll, a leather manufacturer from New York, argued that “the improvement and enlargement of *existing and long established* routes of commerce which had been created by the fundamental economic laws” presented the only “genuine” means of transportation relief.<sup>52</sup> In short, opponents argued that the railroads provided the momentum behind national industrial development, and the unquantifiable amount of capital, infrastructure, expertise, and familiarity invested in railroads created commercial and technological inertia that could not and should not be disregarded.

From the IJC’s records, it is clear that the testimony favoring the Seaway proposal over railroad protection far exceeded the inverse position. The GLSLTA’s organization of favorable testimony certainly contributed to this preponderance, but more fundamentally, the hearings provided a venue for large segments of the population, especially from the Midwest, to articulate longstanding grievances against the railroads.

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<sup>50</sup> Ibid., 71.

<sup>51</sup> For an excellent and brief summary of path dependence, technological lock-in and associated ideas, see: Paul A. David, “Path Dependence and the Quest for Historical Economics – One More Chorus of the Ballad of QWERTY,” *University of Oxford, Discussion Papers in Economic and Social History*, No.20 (November 1997), 3-47.

<sup>52</sup> International Joint Commission, *Report on the St. Lawrence Navigation and Power Investigation*, 72 (emphasis added).

The IJC took the voluminous amount of presented testimony under advisement, but clearly stated: “it need hardly be said that the Commission has felt itself in no sense bound to confine its consideration to, or base its conclusions solely upon, the testimony.”<sup>53</sup> In addition to public hearings, the IJC employed statistical experts from Washington and Ottawa to analyze and check all statistical information presented to the Commission. The JBE reported their technical and engineering analysis of the waterway to the Commission in July and August of 1921.<sup>54</sup> In turn, the IJC made the technical plans available for 30-days at their offices in Washington and Ottawa, allowing interested parties to examine them and file petitions with criticism, comment, or alternative suggestions. Following the thirty days, the Commission granted Ontario Hydro and the New York & Ontario Power Company an extension to submit alternative development schemes. In November 1921, the IJC held a final meeting to discuss technical specifics and alternative plans.<sup>55</sup>

The JBE’s final engineering plans remarkably resemble the works ultimately constructed in the 1950s. They recommended that the channel from the Lakes to Montreal traverse the river’s “natural” channel, dredged channels, a series of canals with seven lift locks, and the creation of an artificial lake by impounding water for hydroelectric production. The system would be designed to maintain a minimum depth of 25 feet – to correspond with the Welland Ship Canal – and could accommodate further

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<sup>53</sup> Ibid., 158.

<sup>54</sup> An initial report was submitted on July 2, and the final report on August 24, 1921. For a summary of the JBE’s report see: Ibid., 12, 167-174.

<sup>55</sup> The final hearing was held on November 14, 1921. Ibid., 13.

deepening to 30 feet. They also called for the development of the Long Sault's power potential along similar lines implemented 33-years later.<sup>56</sup>

The Commission transmitted their final report to the two governments in January 1922. The most extensive economic and technical analysis of the St. Lawrence route up to that time, the report itself totaled 184 pages, but included twelve appendices of engineering and economic reports, as well as all the testimony presented at public hearings.<sup>57</sup> Given the volume of information collected, the open process of data solicitation, and the analytical work done by enlisted experts, the Commission's conclusions carried considerable weight and authority. Seaway advocates eagerly anticipated their recommendations, which they knew would change the terms of Seaway discourse. A favorable report meant conceptual sanction within the envirotechnical regime, and would provide legitimacy for the idea's political and material actualization.

*The International Joint Commission: Conclusions and Recommendations*

Straightaway, the IJC concluded that it found "nothing in the evidence to warrant the belief that ocean-going vessels of suitable draft could not safely navigate the waters in question as well as the entire waterway from the Gulf of St. Lawrence to the head of the Great Lakes, or that such vessels would hesitate to do so if cargoes were available."<sup>58</sup>

This brief statement validated the hopes of the Seaway enthusiasts and provided political and epistemic legitimacy to their aspirations. However, the endorsement was not

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<sup>56</sup> Printed as: United States, Congress, Senate, Joint Board of Engineers, *Report of the U.S. and Canadian Government Engineers... to the International Joint Commission*, Senate Document 179, 67 Congress, 2 Session (Washington: GPO, 1922), 3-5.

<sup>57</sup> Transmitted on January 6, 1922. The appendices do not include the report of the JBE, and have never been published by either government.

<sup>58</sup> International Joint Commission, *Report on the St. Lawrence Navigation and Power Investigation*, 176.

effusive, but a tempered reaction to serious and sustained criticism of the Seaway idea voiced by powerful interests.

The IJC articulated a series of subsequent conclusions to accompany this general statement. With regard to alternative schemes they claimed that other routes did not offer “advantages comparable with those of the *natural* route by way of the St. Lawrence.” In terms of economic feasibility, they concluded that the region “economically tributary” to the Great Lakes and St. Lawrence had a volume of traffic that “might reasonably be expected to seek this route,” sufficient to justify the associated cost. They determined that American railroads had failed to cope with the “phenomenal growth of population and industry through the middle western and western states” and that the utilization of every practicable means of transportation “particularly the wonderful *natural waterway* extending from the Atlantic into the very heart of the continent, together with... a system of cooperation between railways and waterways” would ameliorate transportation deficiencies. The IJC qualified this point by noting that the Canadian rail system developed “in advance of population and production,” and the waterway’s benefits would disproportionately accrue to the United States. Finally, the Commission concluded that regions economically tributary to the Lakes, with their “limitless resources, its raw materials within easy reach, [and] its facilities for industrial expansion” would inexorably become an “even greater factor” in the world’s commercial markets, if provided an efficient outlet to the Sea.

The question of cost distribution required considerable deliberation. Given the two country’s vast differences in population, wealth, and the waterway’s utility, the Commission argued that financing the project in proportion to the expected national

benefits would be an equitable solution. In their words, the Commission believed that each country should be “debited with its share of the entire cost of all works necessary for navigation, including the cost of the Welland Ship Canal” already financed by Canada, based on national proportions of the total cargo the waterway carried.

With respect to waterpower developed in the International Section, the report concluded that all costs and the power produced should be shared equally between the two countries. On the question of control over navigation, the IJC recommended that navigation works exclusively located in a single country’s territory should be under the control of that country, but works in the International Section should be operated and maintained by an “international board of control” with equal representation. Moreover, this board should have the power to inspect national navigation works to “insure *economy and efficiency*.” Finally, they suggested that before adopting any definitive plan the two governments should refer all the engineering data “to a special technical board for careful consideration and report.”<sup>59</sup>

On this final point, the IJC seemed to implicitly undermine its expertise. In fact, significant questions about the project’s hydrologic repercussions remained unanswered. For example, the imposition of these works would revise the river’s geography, altering discharge rates, water levels, and the extent of the floodplain. These hydrologic changes could cause damage to adjacent property, a concern raised by local communities a decade earlier. In the Commission’s estimation these questions required further study and site-specific knowledge. They did not cede epistemic authority but qualified it, and did not believe that these hydrologic uncertainties merited wholesale reassessment. The emphasis on property damage discloses the values built into the regime’s risk assessment

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<sup>59</sup> All these conclusions and quotations can be found in: *Ibid.*, 176-180 (all emphasis added).

metrics. The prevailing concerns were economy and cost mitigation, not aesthetic or experiential loss, and certainly not the hydrologic or ecological consequences.

In accordance with these conclusions, the Commission made eleven specific recommendations:

- 1) The two governments should enter into a treaty for a “scheme of improvement” of the St. Lawrence River between Montreal and Lake Ontario
- 2) The New Welland Ship Canal should be considered as a part of such a scheme
- 3) The whole project be restudied from the engineering point of view exclusively
- 4) An “exhaustive investigation” should be made on the question of “damage through flowage,” to anticipate damages caused by the project’s impact on water levels
- 5) Appropriate steps be taken to transfer, from one country to the other, small portions of submerged land needed for the construction and operation of power works
- 6) Canada should complete the Welland according to its own plans
- 7) An “international board” be created by the two governments with equal representation
- 8) Although each country will control the navigation works in its own territory, the board should be given the right to inspect national works
- 9) Power works do not require international control, but can operate under national jurisdictions
- 10) The cost of all navigation works should be apportioned on the basis of the benefits each country will receive from the new waterway, subject to reassessment and readjustment every five years
- 11) The cost of works for the combined use of navigation and power should be apportioned equally between the two countries<sup>60</sup>

Thus, the IJC investigated, reported on, and recommended one of the most herculean engineering projects ever seriously considered in North America. The hearings revealed deep sectional divisions that underscored opinions about the project. The IJC’s analytical approach, emphasis on efficiency, and language characteristic of its report are consonant with its conservationist origins and *bona fides*. Conservationists generally supported the project, and advocates drew strength from the movement’s lingering influence, especially by framing the project as an economical use of shared resources. Seaway enthusiasts

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<sup>60</sup> The recommendations are paraphrased from: Ibid., 180-181 (emphasis added).

celebrated the IJC's favorable recommendations, and its report became the touchstone of the advocacy movement and the keynote of their arguments. Buttressed by the IJC's epistemic authority, the report established a positive reference point for advocacy discourse. However, after the report's completion and dissemination, it left the hands of allegedly dispassionate experts and returned to disparate political arenas. The IJC's conclusions encouraged advocates but simultaneously inflamed opposition, touching off an intense political debate and protracted diplomatic effort to construct a treaty that enshrined the IJC's plan.

### *Coining the "Seaway" and Questioning Authority*

Reacting to the IJC's report, President Harding suggested the initiation of treaty negotiations. However, the State Department cautioned that since the impetus for the IJC study came from Congress, that body should initiate negotiations.<sup>61</sup> Congress seemed politically incapable of doing so. For several days after receiving the report, rival committees fought for jurisdictional control of the Seaway question.<sup>62</sup> In the end, the Senate Committee on Foreign Relations and House Committee on Interstate and Foreign Commerce won control. Given the legislative branch's inaction, coupled with insider information from Frank Keefer in Ottawa, the State Department quietly decided to open informal negotiations with Canada. They dispatched a note to the British ambassador

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<sup>61</sup> The correspondence between the President and State Dept. officials can be found in: Harding to Charles E. Hughes, January 17, 1922, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/75; Harding to Hughes, March 25, 1922, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/93; Henry P. Fletcher, Acting Secretary of State, to Harding, February 15, 1922, and Harding to Fletcher, February 16, 1922, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/75.

<sup>62</sup> In the Senate the contest was between the Committee on Commerce and the Committee on Foreign Relations, in the House it was between the Committee on Interstate and Foreign Commerce, the Committee on Foreign Affairs, and the Committee on Rivers and Harbors. See: United States, Congress, Senate, *Congressional Record*, 67 Congress, 2 Session (January 16, 1922), 1199; United States, Congress, House, *Congressional Record*, 67 Congress, 2 Session (January 20, 1922), 1457-58; United States, Congress, House, *Congressional Record*, 67 Congress, 2 Session (January 24, 1922), 1645.

stating that the President favored a treaty framed on the basis of the IJC report, and asked if the Canadian government “was disposed to undertake the negotiation of such a treaty.”<sup>63</sup>

Advocates viewed this as an auspicious signal from the President. To capitalize on the enthusiasm generated by the IJC’s endorsement, Craig and Keefer collaboratively organized a Seaway tour and invited Canadian and American government officials – the party included eleven state governors and twelve U.S. Senators – to visit the Welland construction site, and attend a banquet at Ontario Hydro. At the banquet, Adam Beck proclaimed: “the wasteful course of waters should cease... It must stop. We must work hand in hand. On the St. Lawrence let our two governments build a dam. Let them develop those God-given powers to their full for the good of the people!” His address, according to one newspaper, swept the attendees into a “frenzy of enthusiasm.”<sup>64</sup> Beck’s comments contain an undercurrent of the argument about nature’s perfectibility deployed by an earlier generation of advocates, along with a conservationist preoccupation with the elimination of waste, and a subtle comment that hydropower should be a public good. In this context, it is worth remembering Ontario Hydro’s maxim – “*dona naturae pro populo sunt*” [the gifts of nature are for the public].

Collecting Canadian officials, the party proceeded to sail down Lake Ontario and through the St. Lawrence’s 14-foot canals. On occasion, Henry J. Allen, the governor of Kansas, persuaded the captain to stop and let the esteemed group swim in the canals. The

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<sup>63</sup> The note was dated May 17, 1922, see: United States, State Department, *Papers Relating to the Foreign Relations of the United States*, 1922, I (Washington, DC: GPO, 1938), 677.

<sup>64</sup> “Ocean Liners in Ten Years,” *Massena Observer*, July 21, 1921, 1.

tour concluded at Quebec City, where the Governor General of Canada hosted a lavish reception.<sup>65</sup>

This tour is an important moment in Seaway advocacy, because it exposed a number of important political actors to the St. Lawrence landscape and firmly enlisted one of the movement's most fervent advocates – Henry J. Allen. Within a few months, Allen deliberately provoked New York opposition to the Seaway by giving a pro-Seaway speech before the engineering societies of New York City. He provocatively asked: “Isn't it perfectly obvious that it is better for the Middle West to load its grain at Chicago and other lake points and send it straight to Liverpool than to send it through the barge canal at Buffalo, reload it at New York and suffer the expense and the delay of going the additional 450 miles?”<sup>66</sup> To the delight of advocates and agitation of the New York audience he turned a new phrase: “We are bound for Liverpool, not Buffalo,” which the Tidewater Association quickly appropriated for its promotional material.

Allen's audacity elicited a response from New York's governor, Nathan L. Miller, who challenged Allen to a debate. Allen agreed, and they arranged a debate on March 1, 1922, before a conference of waterway managers and enthusiasts, the Rivers and Harbors Congress in Washington.<sup>67</sup>

The debate traversed a range of familiar arguments. Governor Allen disparaged the New York Barge Canal and accused his opponent of considering only provincial interests, and recapitulated the IJC's conclusions in favor of the St. Lawrence route. Governor Miller replied by questioning the cost of the undertaking, reminding the

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<sup>65</sup> Ibid.

<sup>66</sup> Quoted in: “Governor Allen Answers Great Lakes Critic,” *Mississippi Valley Magazine* (December, 1921), 7.

<sup>67</sup> The proceedings of the debate can be found in: Harry Hopkins Merritt, et al, *Joint Debate on the St. Lawrence River Ship Chanel* [sic] (Washington: Rivers and Harbors Congress, 1922).

audience of the St. Lawrence's seasonality, and he described unresolved jurisdictional disputes in hydropower development. The most interesting exchange occurred at the debate's conclusion.

When Allen confessed that the IJC had only issued "a working report," not a program on which construction could begin, Miller replied, "[you say] this is all preliminary. If it is, well and good... [but] I think brother Craig will get after you."

Allen responded that only the methods of building and not the entire Seaway idea should be considered preliminary, to which Miller replied, "I knew he would want to hedge when I reminded him of Craig!"

Miller proceeded to demand that Congress conduct a final, more thorough investigation: "Let them employ experts," he proclaimed, "impartial experts – not the kind that Great Lakes-Tidewater Association called before the Committee, not the kind who know nothing but distances and averages. Let them employ impartial experts."

Allen responded: "Is it your contention that this International Commission called before it none of that character of testimony?"

"None that I know of," Miller answered. "I am willing to admit that I have not read all the testimony. It is a stack at least that high," he said motioning over his head.

"Isn't it possible," Allen countered, "that some of it may have been from intelligent sources, in a stack that high?"<sup>68</sup>

This exchange is important because it highlights, firstly, through the invocation of Craig, that he and his organization had become an axis around which the debate turned. He embodied the movement. Secondly, Governor Miller questioned the expertise and impartiality of the testimony presented before the IJC and, implicitly, the expertise of the

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<sup>68</sup> This exchange is taken from *Ibid.*, 37-38.

IJC itself. The previous chapter described the blurry lines between advocacy and institutional expertise in the course of the IJC's earliest interaction with the Seaway idea. In this instance, Miller questioned the impartiality of the evidence on which they based their conclusions. Miller's incredulity is a useful reminder of the contested nature of expertise, and that the IJC's recommendations are social and political artifacts, not received knowledge or objective truths.

The debates also incidentally included an important discursive intervention. On two occasions Governor Allen referred to the St. Lawrence Waterway as the "Seaway" – "I think we ought to know... [if] Governor Miller... is opposing the *St. Lawrence seaway* because he thinks it won't work or because he thinks it will work;" and, "I think I could do better in the very brief time that remains to me by calling attention to some of these objections to the *St. Lawrence seaway project*."<sup>69</sup> At a glance, this etymological revision seems innocuous, and the debate is not the precise origin of the term's use. Craig often used the phrase "a way to the sea" in his earliest correspondence on the subject, and when naming the GLSLTA's bulletin.<sup>70</sup> In 1919, the National Rivers and Harbors Congress used the expression "the seaway to the Great West," and a journalist, Arthur M. Evans used the term "seaway" repeatedly in his articles, written for the *Chicago Tribune* after he returned from the Seaway junket down the St. Lawrence.<sup>71</sup> However, Allen's appropriation and deployment of the term in this debate marks a discursive turning point. Newspapers reporting on the debate repeated the phrase and advocates adopted it for their

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<sup>69</sup> See: *Ibid.*, 11, 13, respectively (emphasis added).

<sup>70</sup> For example, Craig to C.R. Duncan, Fort William, ON, September 10, 1919, NEMHC, *GLSLTA Records*, Collection #S3040, Box 1, Folder 11, "General Correspondence, California – Ohio, 1919."

<sup>71</sup> National Rivers and Harbors Congress, *The St. Lawrence Route* (Washington: The Congress, December 10, 1919), 1. For the earliest example of Evans' use, see: Arthur M. Evans, "Lakes Atlantic Engineering Not a Hard Problem," *Chicago Daily Tribune*, July 16, 1921, 4.

material, and by the summer of 1922, it circulated widely. Unlike alternative names – e.g. the “St. Lawrence Deep Waterway Project” or “Great Lakes-St. Lawrence Tidewater Project” – the term “Seaway” is simple, clear, and evocative. With this phrase, the Seaway became an established “discursive fact” – to borrow a term from Michel Foucault. The amorphous field of circulating ideas promoting deep-water navigation from the Great Lakes to the Atlantic by way of the St. Lawrence attained sharper relief under the term “Seaway.”<sup>72</sup>

Both Allen and Miller saw the debate as a success and agreed to a second round a few months later before the Illinois Manufacturing Association. Newspapers’ verdicts diverged by region – the *New York Evening World* declared Miller the unambiguous winner, and the *Kansas City Journal* claimed, “if there was ever a one-sided debate held in America, it was that between the Governors of Kansas and New York, which the former won by all rules of logic and common sense.”<sup>73</sup> Putting the disputed champion aside, the debate cemented Allen and Miller as national symbols for and against the project. The contest also helped to clarify the principal actors and arguments on each side, and increased public attention on the question. In a sense, the debate set the terms and tone of a broader Seaway discussion that persisted over the following decade.

### *William Lyon Mackenzie King and Sectional Politics*

Following the IJC report, an American offer to open treaty discussions, and the first formal “Seaway” debate, Seaway enthusiasts had good reason to be sanguine. They

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<sup>72</sup> The term “discursive fact” was used by Foucault to describe the way that “sex” is put into discourse. Here I am using it to describe the process of how an amorphous set of Seaway ideas were given more definite discursive form under the term “Seaway”. See: Michel Foucault, *The History of Sexuality, Vol. 1: An Introduction*, Robert Hurley, trans. (New York: Vintage Books, 1990), 11.

<sup>73</sup> “Miller Meets Allen in Debate on Waterway,” *New York Tribune*, March 2, 1922, 3; and from a clipping marked: “*Kansas City Journal*, March 3, 1922,” LoC, Manuscript Division, *Henry Justin Allen Papers*, Collection MSS50781, Box C 97, Scrapbook, “St. Lawrence Seaway Project.”

had won the support of several prominent national figures to their cause – President Harding, Herbert Hoover, Franklin K. Lane, etc. – considerably increased their membership ranks, and amplified their public exposure. However, north of the border, the Seaway’s fortune remained ambiguous.

In December 1921, the Liberal Party led by William Lyon Mackenzie King won a slim majority and assumed control of Canada’s Parliament. The Conservative defeat left Frank Keefer out of office, a major blow to the Canadian advocacy movement. Craig believed that the Seaway movement required Keefer’s continued presence in Ottawa, but keeping him there required financial support and the CDWPA had dissipated its meager coffers in a conflict with a rival organization in Toronto. As the IJC report noted, Canadian support for the Seaway idea seemed tentative at best, and Craig sought to buttress the movement’s allies north of the border. Consequently, Craig surreptitiously spent Tidewater Association funds to keep Keefer in Ottawa. Craig justified this secrecy by claiming that it would be embarrassing and possibly damaging to the cause if Canadians knew that the chief Seaway lobbyist in Ottawa received support from an American organization.<sup>74</sup>

In his new role, Keefer approached incoming cabinet members to gauge their support for the Seaway initiative. Five of King’s ministers were Québécois and hostile to the idea, and the rest seemed to know little about the project. In fact, Keefer told Craig that when he approached the new Prime Minister directly, King “did not seem to know very much about the Deep Water question;” but “in a general way, he thought it was an

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<sup>74</sup> For the details of this surreptitious support and Craig’s justification, see: Craig to Gardner, December 21, 1921, NEMHC, *GLSLTA Records*, Collection #S3040, Box 4, Folder 30, “Canada – Massachusetts, Springfield, 1921;” and Craig to Keefer, January 3, 1922, NEMHC, *GLSLTA Records*, Collection #S3040, Box 7, Folder 5, “Alabama – Illinois, Chicago, H.C. Gardner, 1922.”

excellent project.” King wanted more information so the two arranged a dinner meeting at Keefer’s Ottawa residence. At the appointed dinner, King expressed sympathy for the Seaway project but also hesitancy to initiate any major undertakings without a clear Parliamentary majority. Keefer responded that the Prime Minister did not need to put the Seaway proposal immediately before Parliament, just to enter negotiations with the United States. To Keefer, it seemed that King had accepted this line of reasoning and he telegraphed Craig to say that Ottawa would definitively agree to treaty negotiations.<sup>75</sup>

Receiving this telegram, Craig rushed to pass word to his Senatorial friends – Townsend (MI), Lenroot (WI), Kellogg (MN), and McKinley (IL) – and the news quickly reached the Harding administration. Keefer’s synopsis of his dinner with King inspired the American diplomatic note of May 17, 1922, which asked Canada to open Seaway negotiations.

Advocates and officials in Washington did not anticipate King’s response. Either Keefer had misinterpreted the Prime Minister’s disposition or King reversed his opinion, but when discussing the note with his cabinet, King recommended deferring the government’s response. He claimed the cabinet had not had time to give the IJC and JBE reports the “careful consideration which their importance merits,” and given “the magnitude of the project, and the very large outlay of public money involved, the government is of the opinion that it would not appear to be expedient to deal with this matter at the present time.”<sup>76</sup> With this response dispatched to the United States, the Canadian government temporarily laid the Seaway issue to bed.

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<sup>75</sup> Keefer to Craig, February 10, 1922 and March 4, 1922, NEMHC, *GLSLTA Records*, Collection #S3040, Box 7, Folder 5, “Alabama – Illinois, Chicago, H.C. Gardner, 1922.”

<sup>76</sup> *Correspondence Between the United States Government and Government of Canada, Concerning the St. Lawrence River*, 12 George V, Sessional Paper 89a, A, 1922 (Ottawa: His Majesty’s Printer, 1922), 6.

We can only speculate on the rationale behind King's polite decline of the treaty invitation. The undertaking's enormous cost and the debt the government would incur certainly contributed – the Welland project was already over budget, and the government committed to building a railroad to Hudson Bay. Although the Canadian economy continued to expand, the massive outlay of public funds during the First World War caused many Canadians to demand a policy of retrenchment. King also had to maintain his fragile majority in Parliament, and with Seaway enthusiasm essentially confined to Ontario, he had to consider the concerns of the whole country. As the IJC noted, Canadian railroad development outpaced population growth and, unlike the United States, an incipient transportation crisis did not exist. Some commentators also argued that no domestic market for additional power developed at the Long Sault existed, and exporting it to the United States meant enriching a foreign nation at the expense of future Canadian needs.

In fact, the entire scheme agitated Canadian nationalists, who pressed for an all-Canadian alternative. Frederick George Scott, a renowned Canadian poet and political commentator, provocatively declared that the St. Lawrence proposal:

“Would be equivalent to moving the United States boundary line north to the St. Lawrence River, and Canada might find herself in a hopeless national position at any time. The St. Lawrence is a great Canadian asset; it is also an imperial asset, and must be wholly under [Canadian] control. At some future time the Empire might be at war with a foreign power with which the United States was at peace, and it might be necessary for us to close up the river by mines or in other ways. It is the very special marrow of Canada, and on its shores and the shores of its tributaries lie the cities of a large part of Quebec and Ontario.

The internationalizing of the St. Lawrence would cut us off both really and sentimentally from the lower provinces. The thing is unthinkable. Would Americans consent to the internationalizing of the Panama Canal or the Mississippi? Our great river must be ours and ours alone. Canadians must

face the fact that the joint stock management of the St. Lawrence would be the first step in annexation.”<sup>77</sup>

Scott, like Creighton, argued that the St. Lawrence bound the nation together and connected Canada with empire. His invocation of the specter of annexation resonated long standing fears that the United States posed a perennial threat to Canadian sovereignty. In a similar vein, Canadian Senator J.P. Casgrain repeatedly referred to the project as a “Trojan Horse,” a move that would “place the Stars and Stripes on the banks of the St. Lawrence.” Archille Bergevin, in Quebec’s legislative assembly, warned that Canadians might find themselves “annexed and brought within their [the United States’] boundaries.”<sup>78</sup>

Of course, these views should not be regarded as the universal Canadian perspective. However, they capture some pervasive misgivings about the project, and widespread suspicion about American motives. Many Canadians expressed concern about the expanding scale of American economic and cultural penetration into Canadian life. Moreover, the sentiment underlying resource and boundary disputes present during late 19<sup>th</sup> and early 20<sup>th</sup> centuries continued to inform Canadian attitudes toward their southern neighbor. Continued diversion of Great Lakes water at Chicago, in particular, caused Canadian consternation. Chicago had been diverting Lake Michigan’s water to feed its Drainage Canal since the turn of the century, amidst protests from the other lake states and Canada that lowering lake levels – by about four to six inches – was

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<sup>77</sup> Printed in the *Toronto Globe*, July 19, 1921; and reprinted in: J. Castell Hopkins, *Canadian Annual Review of Public Affairs, 1921*, (Toronto: The Annual Review, 1922), 160.

<sup>78</sup> The Casgrain quote is from speeches to the Canadian Senate on May 10 and 16, 1922, reproduced in: United States, Congress, Senate, Committee on Foreign Relations, *St. Lawrence Waterway: Hearings before a Subcommittee of the Senate Committee on Foreign Relations on S.Res.278*, 72 Congress, 2 Session, November 14-18, 28, December 2, 13, 20, 1932, February 10, 1933 (Washington, DC: GPO, 1933), 874-895. Bergevin’s speech was given on March 20, 1922 and this quote is reproduced in: Willoughby, *The St. Lawrence Waterway*, 99-100.

detrimental to navigation and waterpower and violated the rights of downstream users. In 1924, the Canadian Department of External Affairs officially protested the diversion as a violation of the Boundary Waters Treaty of 1909. In response, officials in Washington assured their Canadian counterparts that the courts would dispose of the issue, but the courts moved slowly and the diversion continued unabated for several years.<sup>79</sup>

Prime Minister King had to consider all these factors in his decision to defer the American treaty proposal. However, one factor stood above the rest – Quebec. As earlier chapters suggested, waterway advocates had long perceived French Canadians to be an obstacle to the expansion of Canada’s waterways. In the 1920s, this long tradition of waterway obstinacy continued with Quebec’s charismatic and outspoken Premier, Louis-Alexandre Taschereau. During his 16-year (1920-1936) tenure as Premier, Taschereau led Quebec’s charge against the Seaway project and federal schemes to develop the St. Lawrence’s power potential. In Quebec, opposition to the Seaway transcended political boundaries, and one of Taschereau’s chief ideological opponents, historian Lionel Groulx, shared this particular position.

Groulx is widely considered to be one of the founders of nascent French Canadian nationalism. His early publications – *L’Appel de la race* (The Call of the Race, 1922) and the monthly periodical *L’Action Française* (1917-) – advocated vehement defense of the French language and French Canadian culture. Groulx championed the idea of a strong, quasi-independent French Canadian state within the confines of confederated Canada, and promoted the economic re-conquest of Quebec by the French Canadian community. Both Taschereau and Groulx opposed the Seaway project because they

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<sup>79</sup> On April 14, 1930, the Supreme Court ordered that the diversion be gradually reduced to 6,500 cfs in 1930, 5,000 cfs in 1936, and 1,500 cfs in 1939. See: *Wisconsin v. Illinois*, 281 U.S. 179 (S.C. U.S., 1930).

believed it would be injurious to Quebec's economic interests. Pragmatism underscored Taschereau's opposition. The economic preservation of the port of Montreal and retaining provincial jurisdiction over power resources informed his position, whereas Groulx's objection perpetuated a long tradition of French Canadian hostility to the mercantile aspirations of the Anglo-Canadian community. For Groulx, the Seaway represented another Anglo machination that would contribute to the continued economic subjugation of French Canada, in direct contravention to Groulx's notion of economic reconquest. Motivations differed, but the result was widespread opposition to the Seaway scheme among the Québécois.

Pervasive opposition in Quebec constituted a significant political problem for King. Of the 235 seats in Parliament, King's Liberal Party held 117, and he had to build an interparty coalition to advance his legislative agenda. Moreover, of the 117 Liberal seats, 65 MPs came from Quebec. Although King seemed disposed to favor the project, his party's Quebec bloc opposed it. These political circumstances made it politically inexpedient to advance the Seaway cause, so King deferred the issue.

The 1923 election of Howard Ferguson to the office of Premier of Ontario augmented this inauspicious political climate. Believing it would impede Ontario's future development of St. Lawrence power, Ferguson came out strongly against the IJC proposal and federal construction of new St. Lawrence canals. Jurisdictional disputes between the provincial and federal governments over the right to develop hydropower in navigable waters festered over the next decade.<sup>80</sup> A general sense of hostility or

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<sup>80</sup> Over the following decade, Taschereau and Ferguson collaborated on the resolution of jurisdictional questions associated with power production in provincial favor, but a series of Dominion-Provincial conferences failed to resolve this intractable issue. King offered to submit the dispute to the Canadian Supreme Court for settlement, but its 1929 ruling proved inconclusive. Partial resolution came in 1932

indifference toward the Seaway proposal pervaded most of Canada, and formal political support in Ontario evaporated with Ferguson's election; when coupled with the Liberal Party's precarious position in Parliament, Mackenzie King's hesitancy to open treaty negotiations with the United States is hardly surprising. To the dismay of Seaway advocates on both sides of the border, this climate stalled diplomatic action on the IJC's favorable recommendation. Moreover, Seaway promoters south of the border had their own sectional battles to fight.

From the Seaway issue alone, it appears that Mackenzie King's tenure as Prime Minister was characterized by purposeful dithering. However, it is important to qualify this characterization by acknowledging other developments in Canadian external affairs and resource politics beyond the Seaway question. For example, at King's insistence Canada negotiated a treaty concerning fishing rights in the northern Pacific – the 1923 Halibut Treaty – with the United States, and without British participation. At first, Britain insisted on signing alongside Canada, but King refused. He claimed this resource question concerned only the United States and Canada, and even threatened to send independent representation to Washington, which caused Britain to relent. This constituted a major intervention into the normal operation of Canadian-American diplomacy, but followed the well-established trajectory of conservation diplomacy and boundary resource politics as vanguards for increased Canadian independence. In 1927, King sent independent diplomatic representation to Washington and the United States

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with an agreement between Ottawa and Ontario that gave the province the right to generate power in the International Rapids while maintaining federal control over canals, contingent on Ontario paying the costs of constructing and maintaining all joint power-navigation facilities. Taschereau felt betrayed by Ontario's agreement with Ottawa and the question of Quebec's right to St. Lawrence power continued to rankle. For a summary of this story, see: Stagg, *The Golden Dream*, 129.

reciprocated by sending a minister to Ottawa.<sup>81</sup> This first official exchange of independent diplomatic emissaries between the two countries represents another major intervention into the nature of Canadian-American relations.

King's diplomatic maneuvering helped lay the groundwork for a sweeping change in the relationship between empire and colony. The Balfour Resolution, presented at the 1926 Imperial Conference, posited that the self-governing colonies "are autonomous Communities within the British Empire, equal in status, in no way subordinate to one another in any aspect of their domestic or external affairs, though united by a common allegiance to the Crown, and freely associated as members of the British Commonwealth of Nations."<sup>82</sup> King helped craft this resolution; and its eventual adoption by British Parliament under the Statute of Westminster (1931), legally removed British legislative authority over Dominion affairs. These momentous changes mostly transpired under King's leadership and gave Canada full autonomy in future diplomatic exchanges. The recommendations of the IWC and leadership of George Gibbons initiated this trajectory three decades earlier, and the earliest efforts to establish direct interactions centered on the conservation and cooperative management of the boundary waters. Following 1923, the realignment of the relationship between Britain and Canada empowered the Dominion to proceed independently with Seaway negotiations – but also to decline them.

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<sup>81</sup> B.J.C. McKercher, "Between Two Giants: Canada, the Coolidge Conference, and Anglo-American Relations in 1927," *Anglo-American Relations in the 1920s: The Struggle for Supremacy*, B.J.C. McKercher, ed. (Edmonton, AB: University of Alberta Press, 1990), 81-83.

<sup>82</sup> D. Hall, "The Genesis of the Balfour Declaration of 1926," *Journal of Commonwealth Political Studies*, Vol.1 (1963), 161-193; and R. Cook, "A Canadian Account of the 1926 Imperial Conference," *Journal of Commonwealth Political Studies*, Vol.3 (1965), 50-63.

*The Empire (State) Strikes Back*

In 1922, the Tidewater Association opened an office in the Munsey Building in Washington, DC, and Craig moved to the District to devote himself to Seaway advocacy full-time. The Association's unique membership arrangement and multi-state appropriated budget – totaling \$160,000 in 1922-23 and \$220,000 in 1924-25 – permitted extensive lobbying activities in Washington and nationwide promotion.<sup>83</sup> In fact, the Association produced a deluge of literature and sent materials to over 700 libraries on its mailing list, along with a weekly news report to over 4,000 newspaper editors and other members of the press.<sup>84</sup> Craig deployed a range of tactics to cultivate support and counter opposition. For example, when it became obvious that eastern railroads resolutely opposed the Seaway proposal, he successfully cultivated the support of western railroads to keep railroad opinion divided.<sup>85</sup>

Craig maintained an iron grip on *his* Tidewater Association. When the Association's President, Horace Gardner, urged the Association to soft-peddle on the issue of Chicago's diversion to maintain that city's support, Craig could not countenance the idea. The Chicago diversion reduced lake levels and water availability for power and navigation, but more importantly, even a tacit show of support for Chicago's activities threatened to alienate Canadian allies. When Gardner protested Craig's decision, Craig simply went around him to the Association's executive committee. In 1926, as Assistant Director Hugh J. Hughes remarked, "an old, saddened, disappointed, and somewhat

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<sup>83</sup> By 1934, the association was spending more than \$500,000/year, see: "Report to the Executive Committee, 1935, GLSLTA," NEMHC, *GLSLTA Records*, Collection #S3040, Box 25, Folder 15, "Reports to, 1922-1937." Also see: Mabee, *The Seaway Story*, 77.

<sup>84</sup> For an example of this see the widely distributed lists of promotional material found in: NEMHC, *GLSLTA Records*, Collection #S3040, Box 32, Folder 1, "Publications and Pamphlets."

<sup>85</sup> Mabee, *The Seaway Story*, 78.

bitter” Gardner resigned the Presidency and “stepped out of the Seaway picture.”<sup>86</sup> The Association’s next President – W.L. Harding, the former Governor of Iowa – suffered a similar fate. Harding contravened the Association’s nonpartisan mandate by overtly campaigning for the Republican Party as the GLSLTA President. Harding and Craig clashed over the issue until March of 1929, when Craig directed the Association’s Council of States to replace Harding with Henry J. Allen. Harding threatened to retaliate, and, Hughes claimed, “sold himself to the opposition” by becoming a spokesman for the New York and Chicago interests that opposed the Seaway.<sup>87</sup>

Craig remained optimistic about the Seaway’s prospects, but confessed in 1928: “Sometimes I grow a little weary of going over the same subject and answering the same objections which have been over and over disproved – perhaps I grow a little petulant.”<sup>88</sup> Many of these recurrent objections came from the state of New York, which presented the most formidable American challenge to the Seaway idea.

“Resolved that the legislature of the State of New York emphatically disapproves the proposed St. Lawrence Ship canal project” – in 1920, both houses of the New York State legislature unanimously adopted this resolution.<sup>89</sup> They based their opposition on the supposition that it would “divert the commerce of the Great Lakes from its natural course, cause great confusion to established business and result in irreparable injury to the State of New York.”<sup>90</sup> Putting aside the curious idea that the “natural course” of Great Lakes commerce ends at the Port of New York, this resolution is indicative of the

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<sup>86</sup> Hugh J. Hughes, *MS Biography of Craig*, (Duluth, MN: NEMHC, 1933), 155.

<sup>87</sup> By this date, Allen had been elected a U.S. Senator representing Kansas, see: *Ibid.*, 158-9, 162, 171-2

<sup>88</sup> Craig to French, May 1, 1928, NEMHC, *GLSLTA Records*, Collection #S3040, Box 19, Folder 50, “General Correspondence, California – Wyoming, 1928.”

<sup>89</sup> Reprinted in: GLSLTA, “The Way to the Sea: ‘NONSENSE’,” *Bulletin No.26*, March 1925, NEMHC, *GLSLTA Records*, Collection #S3040, Box 28, Folder 12, “Bulletins 1919-1934.”

<sup>90</sup> *Ibid.*

State's attitude toward the Seaway throughout the decade. The IJC noted that the most vociferous objections they encountered came from New York; the state established a public "Commission in Opposition to the St. Lawrence Ship Canal and Power Project;" and New York's governor, Nathan L. Miller argued against the Seaway proposal in the Allen-Miller debates.<sup>91</sup>

New York's opposition emanated from several fronts: the preservation of traffic headed to the Port of New York City, the continued use of the New York Barge Canal, the transshipment business at Buffalo, and the promotion of an all-American alternative to the St. Lawrence route. Congressman S. Wallace Dempsey (R-Lockport, NY) claimed that developing the Seaway would "rob us of all the benefits of commerce by which the State of New York has grown to be the Empire State of the Union."<sup>92</sup> John D. Dunlop, the Chairman of the State's Waterway Conference Committee, declared that the Seaway would "practically destroy the harbor of New York;" and Governor Miller stated that it would "absolutely destroy our investment in the barge canal." The New York Merchants Association, Chamber of Commerce, the Union League Club, as well as numerous political figures and newspapers throughout the state echoed these remarks almost verbatim and, in the opinion of Seaway advocates, *ad nauseam*. The Merchant Association even argued that Montreal would displace New York as the "metropolis of the Western Hemisphere;" an ironic contention since Montreal believed the Seaway

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<sup>91</sup> International Joint Commission, *Report on the St. Lawrence Navigation and Power Investigation*, 143, 158. The Commission in Opposition issued at least four separate "progress reports" summarizing their activities, see: New York, Commission in Opposition to the St. Lawrence Ship Canal and Power Project, *Progress Reports of the Commission in Opposition to the St. Lawrence Ship Canal and Power Project, Issues 1-3* (Albany: J.B. Lyon, 1922).

<sup>92</sup> Quoted in: GLSLTA, "The Way to the Sea: 'NONSENSE'," *Bulletin No.26*, March 1925, NEMHC, *GLSLTA Records*, Collection #S3040, Box 28, Folder 12, "Bulletins 1919-1934."

would injure their economic interests.<sup>93</sup> This invocation of the metropolis is reminiscent of the 19<sup>th</sup> century competitive waterway projects that sought to capture interior trade and build nations. In a sense, the New York Merchant's association recapitulated DeWitt Clinton's arguments and sought to preserve the Erie Canal's economic legacy.

To counteract this opposition, Craig and the Tidewater Association dubbed the all-American route the "all-New York" route, republished unfavorable USACE reports, reprinted the statements above and many more under the banner "NONSENSE," and funneled association funds to the Northern New York Development League. The League was a collection of the state's St. Lawrence valley chambers of commerce, representing local communities that would immediately benefit from the project's infusion of capital and employment, and one the few Seaway allies in the state.<sup>94</sup>

Despite vehement opposition to the Seaway, one issue that transcended waterway politics in New York was the further development of the St. Lawrence's power potential. In 1921, Governor Miller encouraged the state legislature to create a State Water Power Commission with the authority to issue 50-year licenses to private power concerns. Three companies – the Louisville Power Corporation, the St. Lawrence Transmission Company, and the American Super-Power Corporation of Buffalo (all owned in some portion and combination by Alcoa, General Electric, DuPont, and Mellon) applied to develop the St. Lawrence's International Rapids section.<sup>95</sup> However, jurisdictional

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<sup>93</sup> *Seaway News*, February 27, 1932, NEMHC, *GLSLTA Records*, Collection #S3040, Box 29, Folders 7-11, "Seaway News, Sept. 1926 – July 1932."

<sup>94</sup> See: GLSLTA, "The Way to the Sea – Facts and the Argument," *Bulletin No.37*, December 1927, 27, 38, NEMHC, *GLSLTA Records*, Collection #S3040, Box 28, Folder 13, "Bulletins 1919-1934" (their emphasis).

<sup>95</sup> New York Water Power Commission, *First Annual Report* (Albany, 1922), 18-20.

ambiguity about the power development in boundary waters delayed the consideration of any of these applications before the inauguration of a new Governor, Alfred E. Smith.

An advocate for public ownership of power resources, Smith urged the state legislature to abolish the Water Power Commission, and instead, authorize the state to develop and transmit Niagara and St. Lawrence power as a public good. The Republican controlled Assembly ignored his recommendations, but the Commission, now under Democratic control, declined all private applications.<sup>96</sup> The Commission continued to switch party control, and utility companies' resubmitted their applications, but received no actionable decision.<sup>97</sup> Smith's dedication to the idea of public power did not yield tangible results during his tenure, but his successor, Franklin D. Roosevelt continued to press the issue. Like Smith, Roosevelt asked the Republican dominated Assembly to approve state development of St. Lawrence power in 1929.<sup>98</sup> With economic conditions deteriorating and public opinion shifting toward public ownership, Roosevelt convinced enough Republicans to the public power cause, and the state legislature sanctioned the creation of an executive commission to study state power development on the St. Lawrence.<sup>99</sup>

Named the "St. Lawrence Power Development Commission," the creation of this institution provoked private power interests who feared exclusion from the state's electricity markets. In 1931, the Commission reported in favor of state development of St. Lawrence power, but in a conciliatory gesture to private enterprise it provided no

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<sup>96</sup> New York Water Power Commission, *Third Annual Report* (Albany, 1924), 10.

<sup>97</sup> The Companies actually withdrew their applications in 1927 when Gov. Smith threatened to pursue legal action against them. For the whole story see: New York Water Power Commission, *Sixth Annual Report* (Albany, 1927).

<sup>98</sup> *Public Papers of Franklin D. Roosevelt, Forty-Eighth Governor of the State of New York, 1929* (Albany: J.B. Lyon Co. Printers, 1930), 157.

<sup>99</sup> "Governor to Name Commission on St. Lawrence," *Massena Observer*, January 16, 1930, 1.

specifics on how the power would be distributed.<sup>100</sup> Unlike Ontario Hydro, which generated and distributed electricity, the Commission's proposal left space for private companies to purchase power from the State and, in turn, distribute it to end consumers. After some political maneuvering, Roosevelt's request to establish a public power authority passed both the state Assembly and Senate unanimously. In April 1931, Roosevelt signed the Power Authority Act, thereby creating the Power Authority of the State of New York (PASNY). The first publically owned utility in the United States, PASNY played a significant role in the Seaway story.

The Tidewater Association expressly eschewed a position on private vs. public power, and avoided the PASNY debates; but Craig wanted to ascertain Roosevelt's position on the Seaway. Roosevelt invited Craig to the Governor's residence to discuss the Seaway idea.<sup>101</sup> Roosevelt desired to develop the river's power potential, but expressed concern about persistent jurisdictional issues between the federal and state governments. He also claimed to favor "immediate transportation for the West down the St. Lawrence River," although his reasons for supporting this are unclear. Nevertheless, under the right conditions, Roosevelt seemed inclined to support the Seaway, but at the moment would not publicly endorse the idea.<sup>102</sup> The Governor of New York and the Tidewater Association took tentative steps toward one another, and by doing, prepared

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<sup>100</sup> New York, St. Lawrence Power Development Commission, *Report, Submitted: January 15, 1931* (Albany: J.B. Lyon Co. Printers, 1931), 25-27.

<sup>101</sup> This meeting took place in March 1931. As Craig described it, his only previous meeting with Roosevelt had gone "most unsatisfactorily." Roosevelt scarcely listened to Craig and saw "the project as a political asset," not a public work to benefit of the nation. However, this meeting proceeded more cordially. See: Charles P. Craig, Memorandum, "Substance of a Conference," December 15, 1930, NEMHC, *GLSLTA Records*, Collection #S3040, Box 26, Folder 28, "Memoranda, 1919-1934."

<sup>102</sup> Charles P. Craig, Memorandum, March 14, 1931, NEMHC, *GLSLTA Records*, Collection #S3040, Box 26, Folder 28, "Memoranda, 1919-1934;" and Roosevelt to Craig, April 1, 1931, NEMHC, *GLSLTA Records*, Collection #S3040, Box 20, Folder 90, "General Correspondence, California – South Dakota, 1931."

the ground for a momentous change in New York's disposition – from antipathy toward the Seaway idea to tacit support.

*The Seaway Commission and Expansion of the Joint Engineering Board*

In 1924, the Canadian government informed the United States that in place of treaty negotiations, they would follow the IJC's suggestion and appoint additional members to the Joint Board of Engineers for the preparation of a final report thoroughly covering the engineering aspects of the St. Lawrence project. To subdue domestic opposition it also proposed that each country create an associated committee to "inquire fully from a *national* standpoint into the wide questions involved."<sup>103</sup> Disappointed with the Canadian proposal's modesty, the Coolidge administration, anxious for Seaway traction, immediately accepted the suggestion, appointed two additional engineers to the JBE, and created a national advisory board, the St. Lawrence Seaway Commission, to reexamine the proposal from a political and economic perspective, led by the Secretary of Commerce, Herbert Hoover. A few weeks later Canada followed suit.<sup>104</sup>

Before the national committees and the JBE commenced their work, the governments had to set the terms of reference. This proved challenging because the Canadian government insisted that the Chicago diversion be considered, but the diversion at Niagara Falls, which favored Canada, be excluded from the investigation.<sup>105</sup> Their insistence on these terms had a legitimate diplomatic and hydrologic basis – the Niagara diversions are intra-basin and return the water to the Great Lakes-St. Lawrence system –

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<sup>103</sup> The IJC suggestion can be found in: International Joint Commission, *Report on the St. Lawrence Navigation and Power Investigation*, 180. The Canadian note can be found in: United States, State Department, *Papers Relating to the Foreign Relations of the United States*, 1924, I (Washington, DC: GPO, 1939), 342-346 (emphasis added).

<sup>104</sup> For the names and a critical evaluation of the qualifications of the membership of the advisory committees, see: Wright, *The St. Lawrence Deep Waterway: A Canadian Appraisal*, 70-72, 107-108.

<sup>105</sup> Under the terms of the Boundary Waters Treaty, Canada was allotted 36,000cfs and the United States received 20,000 cfs. See the Treaty, Article V.

whereas the Chicago diversion is an inter-basin removal of water from the system. Hoover recommended omitting diversions altogether, but Canada refused. Hoover's eagerness to proceed with the investigation prevailed, and he agreed to Canada's terms. With this obstacle removed, the two nations promptly approved the terms of reference and exchanged authorizations on February 4 and March 17, 1925.<sup>106</sup>

The JBE completed and transmitted its report in November 1926. The Board agreed with the IJC about the economic feasibility of the Seaway project, but could not agree on a definitive plan of action for the International Rapids section. The American delegation to the JBE recommended a single-stage plan, with a power dam at Barnhart Island; but their Canadian counterparts favored a two-stage plan, with dams near Morrisburg and Cornwall. The American members contended that the single-stage plan would create better navigation conditions and produce slightly more power at less cost. On the other hand, the Canadians argued that a two-stage process would flood less land and start producing power at an earlier date. Flooding was an important consideration, because the floodwaters would adversely affect Canadian communities around the Long Sault, and these villages had vigorously protested Alcoa's hydroelectric plans prior to the First World War. The adoption of a single stage plan in the 1950s and inundation of several Ontario communities engendered social transformations commensurate with the project's scale – these social and spatial reconfigurations are discussed in the final

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<sup>106</sup> Hoover suggested that the board should study and report on all diversions *authorized by license* – which conveniently included the Chicago Drainage Canal while excluding the Niagara diversion, which the Boundary Waters Treaty authorized. For the terms of reference and final report, transmitted on November 16, 1926, see: Joint Board of Engineers, *St. Lawrence Waterway: Report of the Joint Board of Engineers Appointed by the Governments of the United States and Canada on the Improvement of the St. Lawrence River between Lake Ontario and Montreal and on Related Questions Referred to the Board by the Two Governments* (Washington, 1927), 2-3.

chapter. The Canadian JBE delegation did not specifically include local voices or concerns, but considered the costs associated with extensive flooding of adjacent lands.

Seaway advocates expressed concern about two national delegations' inability to agree on a conclusive plan, but found solace in the report of Hoover's national St. Lawrence Commission. This Commission's report unequivocally endorsed the Seaway idea and rejected all-American alternatives.

### Stalling the Seaway

In April 1927, Secretary of State and longtime Seaway supporter Frank B. Kellogg wrote to Vincent Massey, Canada's first minister to the United States; in this letter, Kellogg called attention to the favorable reports and asked if the Canadian government would now "enter into negotiations with a view to the formulation of a convention appropriate to this subject."<sup>107</sup> Mackenzie King replied that Canada could not open negotiations because the JBE had not prepared its report's appendices, and the National Advisory Committee (the Canadian correlate to Hoover's St. Lawrence Commission) could not report its findings until it considered this additional information.<sup>108</sup> Seven months after the American invitation, the JBE submitted its full report, which King ordered to be printed in full. This reproduction would be a time consuming process, very likely the reason for King's order, and the process gave him at least three or four additional months to formulate a policy.

King's obvious stalling tactics frustrated Seaway advocates and American officials pressing for a treaty. While waiting for King's response, William Phillips, with the approval of Secretary Kellogg, engaged in a limited "educational campaign" on

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<sup>107</sup> United States, State Department, *Papers Relating to the Foreign Relations of the United States, 1927, I* (Washington, DC: GPO, 1942), 489.

<sup>108</sup> *Ibid.*, 489-490.

behalf of the Seaway idea. In a speech at Toronto, he claimed that the United States desired to give the twenty-one states associated with the Tidewater Association a direct link to the ocean, not to impinge on Canadian independence.<sup>109</sup> However, instead of mitigating Canadian anti-Seaway opinion, Phillips' speech inflamed it. The *Toronto Mail and Empire* claimed that Phillips had "overstepped his diplomatic bounds" and interfered with Canada's domestic affairs. The *Montreal Financial Times* declared that the moment Phillips attempted to convince the people of Canada to favor the Seaway proposal he ceased to be a diplomat and became a propagandist.<sup>110</sup> In the wake of the furor, Phillips concluded that State Department officials should "keep quiet, for a moment at least, until we know more fully the attitude that the Liberal Party is disposed to take." Any further public activity could be construed, he claimed, "as an interference in the political affairs of the nation."<sup>111</sup> Clearly, Phillips took a lesson to heart, one that was reinforced by King's visit to Washington in November 1927, when he admonished Secretary Kellogg that "any undue pressure exerted by the United States would only make it more difficult."<sup>112</sup> The Seaway question remained deeply entrenched in Canadian sectional and ideological politics and American pressure would only hinder the process.

On December 6, 1927, the long awaited appendices arrived from the printer, and the National Advisory Committee transmitted its comprehensive report to the Prime

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<sup>109</sup> For the text of the speech, see: Dispatch, October 3, 1927, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/349.

<sup>110</sup> *Toronto Mail and Empire*, October 5, 1927 and *Montreal Financial Times*, October 7, 1927, NEMHC, *GLSLTA Records*, Collection #S3040, Box 30, Folders 15-16, "Newspaper Clippings: Ontario 1919-1939, Quebec 1921-1939."

<sup>111</sup> Phillips to Kellogg, October 13, 1927, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/347; and Phillips to Kellogg, October 20, 1927, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/348½.

<sup>112</sup> Memorandum of a Conversation, November 25, 1927, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/357.

Minister on January 11, 1928.<sup>113</sup> The report's conclusions rested on two major premises: that the United States should finance *all* development, for both navigation and power in the International Section, as well as the deepening of all the Great Lakes connecting channels; and that the St. Lawrence's initial development should occur in the exclusively Canadian section below Cornwall.<sup>114</sup> The first premise derived from the belief that Canada's investment in the new Welland Canal and earlier infrastructure investments along the St. Lawrence meant that the United States should pay for waterway expansion and power development in shared spaces. Moreover, the United States needed and desired the project more than Canada did, and the anticipated volume of American goods shipped through the waterway would far exceed the volume of Canadian freight. The report's explanation of the second premise is slightly ambiguous, but seems to encourage private enterprise to develop the exclusively Canadian portions of the river, thus avoiding public expenditure on the project.

With the report in hand, the Canadian minister at Washington informed American authorities that his government's consent to treaty negotiations remained contingent on the solution of "a number of financial and economic difficulties" as well as further consideration of certain engineering problems.<sup>115</sup> A fundamental, and recurrent, Canadian concern, the minister claimed, was not transportation but increasing American tariff restrictions on Canadian products. This claim evokes the recurring subtext that waterway expansion and tariff reduction should be linked. Moreover, the minister

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<sup>113</sup> The receipt from the printer was reported in: *Toronto Globe*, December 6, 1927, NEMHC, *GLSLTA Records*, Collection #S3040, Box 30, Folder 15, "Newspaper Clippings: Ontario 1919-1939." The report was printed as: National Advisory Committee, *St. Lawrence Waterway Project* (Ottawa: His Majesty's Printer, 1928).

<sup>114</sup> These premises are stated and explained in: *Ibid.*, 18-27.

<sup>115</sup> This meeting took place on January 31, 1928. United States, State Department, *Papers Relating to the Foreign Relations of the United States*, 1928, II (Washington, DC: GPO, 1943), 64-65.

reminded his American counterparts that power production in navigable streams involved unresolved constitutional ambiguity in Canada. Finally, in a thinly veiled reference to the Chicago diversion, he stated that future discussions should include “a comprehensive settlement of all outstanding problems affecting the Great Lakes and the St. Lawrence, including the preservation of the waters properly belonging to the St. Lawrence watershed.”<sup>116</sup>

State Department officials interpreted the Canadian response as deliberately obstructionist, but promptly replied that although they did not agree with all the details, they regarded the note “as an acceptable basis for negotiation.”<sup>117</sup> Perhaps surprised at this qualified acquiescence, King demonstrated that he would not be rushed. The Prime Minister told the House of Commons that the government would continue to proceed with the “utmost caution.”<sup>118</sup> Although the American authorities seemed anxious to press the issue, Phillips, having recently experienced public backlash from direct intervention, cautioned that it would be best “to let Mr. King take his own course, even though it is aggravatingly slow, rather than give him a chance to say that his efforts have been checked as a result of the activities of promoters of the project in the United States.”<sup>119</sup>

For several months, State Department officials abstained from dragooning the Seaway issue. However, during the campaign for the 1928 presidential elections, the Republican nominee Herbert Hoover made his Seaway *bona fides* a major issue and a point of distinction over his opponent, Alfred E. Smith. Smith’s affiliation with New

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<sup>116</sup> Ibid.

<sup>117</sup> Note from the Secretary of State to the Canadian Minister to Washington (Vincent Massey) on March 12, 1928. Ibid., 72.

<sup>118</sup> Canada, Parliament, House of Commons. *Debates*, 16 Parliament, 2 Session, Vol.178, No.2 (April 11, 1928), 1946.

<sup>119</sup> Phillips to Kellogg, July 12, 1928, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/480.

York and equivocations on the Seaway issue provided a wedge issue for Hoover. Many Midwesterners and the Tidewater Association viewed Hoover's victory as one for the Seaway, but the prospect of negotiating a treaty with Canada had not improved. If anything, King's reluctance to participate had been amplified by Hoover's campaign speeches promising even higher tariff rates on Canadian agricultural products. The specter of higher tariffs presented another obstacle to negotiations. Although King explicitly stated he was not "proposing a 'barter' – that is, cooperation in the St. Lawrence on one hand, and a *status quo* in the tariff on the other," American officials interpreted these remarks to mean that "judicial treatment on the tariff problem" might induce Canadian participation in the Seaway scheme.<sup>120</sup> Once again, the tariff question became entangled with the Seaway; a useful reminder that the Seaway idea did not exist within a political or economic vacuum.

Advocates on both sides of the border suggested that tariff reductions and Seaway negotiations could be traded *quid pro quo*, but in this instance it played out at the highest level of government. In 1929, the *Washington Star* quoted a "high authority" that said that tariff increases on certain agricultural products depended on "the attitude of the Canadian Government toward the proposed waterway."<sup>121</sup> The paper did not identify the "high authority," but in context of diplomatic correspondence it seems quite plausible that the quote came from President Hoover.<sup>122</sup> In the press, the Canadian response can be

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<sup>120</sup> Reported in: Phillips to Kellogg, November 19, 1928, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/543.

<sup>121</sup> This quote was reprinted in many Canadian newspapers, including: *Ottawa Journal*, April 4, 1929, NEMHC, *GLSLTA Records*, Collection #S3040, Box 30, Folder 15, "Newspaper Clippings: Ontario 1919-1939."

<sup>122</sup> The State Department files suggest that in the course of a conversation with the Canadian Minister to the United States, the President suggested that a provision could be inserted in the American tariff bill that would arrest their increase if the Canadians agreed to the construction of the St. Lawrence Seaway within a certain period of time. The Minister pointed out the many political objections to such an agreement –

characterized as widespread indignation. The *Ottawa Journal* said that the United States could “take its tariff and do what it likes about it... Canada can take care of herself;” the *Montreal Star* claimed it would be “criminal folly” for Canada to barter away its rights on the St. Lawrence for temporary relief from American tariffs; and the *Vancouver Sun* suggested that if the St. Lawrence could be used as bargaining instrument, Canada should exact a much higher price from the United States – a “tariff decrease that will create real industrial prosperity in Canada.”<sup>123</sup>

Publically linking tariffs to the Seaway provided ammunition for Canadian nationalists and Seaway opponents, and made it more politically inexpedient for King to openly support the idea. One State Department official commented in a letter to Craig, that the already tortuous path toward treaty negotiations had become “almost sheer ascent.”<sup>124</sup>

### Scandal!

In addition to the myriad difficulties associated with the tariff controversy, persistent delays on behalf of the Canadian federal government, widespread hostility among the Canadian populace and eastern United States, and jurisdictional disputes on both sides of the border, a scandal in Quebec changed the political and physical landscape for the Seaway idea.

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including the charge that the Canadian government was “being dragooned by threats to go into the Waterway scheme.” Given the time and content, it is plausible to assume that this conversation found its way to the press. See: Memorandum by Secretary H.L. Stimson, April 10, 1929, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/588½.

<sup>123</sup> *Ottawa Journal*, April 5, 1929, *Montreal Star*, April 5, 1929, and *Vancouver Sun*, April 5, 1929, NEMHC, *GLSLTA Records*, Collection #S3040, Box 30, Folders 14-16, “Newspaper Clippings: General, 1919-1938, Ontario, 1919-1939, Quebec, 1921-1939.”

<sup>124</sup> T.R. Kirkwood to Charles P. Craig, April 18, 1929, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/597½.

The scandal centered on R.O. Sweezy, an engineer from Montreal. In 1926, Sweezy formed the Beauharnois Light, Heat, and Power Company and applied to the Quebec legislature for the right to develop power in the Soulanges section of the St. Lawrence and to construct attendant navigation facilities. Taschereau recommended that the Quebec legislature approve Sweezy's application, and passed an Order-in-Council authorizing the company to divert 40,000 cfs for the purposes of power production.<sup>125</sup> The Order forbade the export of power to the United States, but allowed the company to sell up to half of the power generated to Ontario Hydro. Seaway advocates were mystified by Taschereau's endorsement, since the Premier had long claimed that the Quebec did not require expanded power or navigation facilities. However, since the project did not pose a threat to future development of the International Section and would effectively advance the Seaway project in the Canadian Section, they gave the plan their tacit support.<sup>126</sup> Approval of Sweezy's second application to obtain federal permission also proved surprisingly easy.

The Dominion government's review of the application lasted only 20-days and made no reference to the fact that the Company's plans differed with the JBE's recommendations – the company proposed placing the navigation works along the St. Lawrence's south bank, whereas the JBE suggested they be constructed along the opposite shore. In February 1929, King announced his intention to approve the Sweezy proposal, and he told the House of Commons that “engineers and experts” had

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<sup>125</sup> For the privilege of diverting water, the Order-in-Council required the company to pay the modest sums of \$20,000/year for the first five years and \$50,000/year afterward. The Order was passed on April 28, 1928. For a detailed discussion of the incident, see: Wright, *The St. Lawrence Deep Waterway*, 156-238.

<sup>126</sup> For example, see: Craig to Kellogg, December 26, 1928, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/529.

determined that the Beauharnois project would aid the interests of navigation and promote regional industrial development.<sup>127</sup>

A Parliamentary inquiry in 1931 shed light on the suspiciously rapid approval of Sweezy's application. Two Liberal senators and friends of Mackenzie King, Wilfred McDougald and Andrew Haydon, had surreptitiously promoted the application's approval. Since 1924, McDougald and Haydon had been partners in a small company that had unsuccessfully applied to develop power at the Soulanges. The Parliamentary inquiry determined that in 1928, McDougald had secretly purchased, at a preferred rate, a sizable number of shares in the holding company that backed Sweezy's Beauharnois venture. That same year, Sweezy engaged the services of Senator Haydon's legal firm and struck a deal to buy the small McDougald-Haydon company, contingent on the Dominion's approval of his application. Altogether, according to the investigation, Sweezy and his associates paid \$436,000 in "so-called legal fees," \$864,000 in "political contributions," and nearly \$1 million in company stock to acquire the worthless McDougald-Haydon company.<sup>128</sup>

The scandal also cast aspersions on the report of the Canadian National Advisory Committee, on which McDougald served. The Committee's tacit recommendation that private power interests develop the Canadian portion of the waterway prior to the International Section became suspect in light of the scandal.<sup>129</sup> Moreover, McDougald held the chairmanship of the Montreal Harbour Board and may have attenuated

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<sup>127</sup> Canada, Parliament, House of Commons, *Debates*, 16 Parliament, 3 Session, Vol.180, No.1 (February 27, 1929), 526 (emphasis added).

<sup>128</sup> Canada, Parliament, House of Commons, *Special Committee on the Beauharnois Power Project* (Ottawa: His Majesty's Printer, 1931), xviii-xxvii, xxx.

<sup>129</sup> It should also be noted that other members of the Committee had private power interests. See: *Ibid.*, 231; and Wright, *The St. Lawrence Waterway*, 107-108.

Taschereau's fear of Beauharnois development. The McDougald-Haydon scandal aside, other factors likely encouraged the Dominion's quick approval. The fact that Quebec independently consented to the construction of a canal that would become part of the Seaway had to come as a relief to Ottawa. Moreover, Ontario Hydro's arrangement to purchase power from the Beauharnois Company with Premier Ferguson's endorsement quelled official opposition from Ontario. Finally, both political parties had been implicated in the application's quick approval, since R.B. Bennett, the Conservative Party's leader, urged his members to support it.<sup>130</sup>

Perhaps the most curious part of this story is its aftermath. The Parliamentary inquiry admonished the offenders, but did not propose to punish them. In fact, in March 1932, the Dominion government signed an additional agreement with a reorganized Beauharnois Company, which required the Company to deepen their canals to the proposed Seaway depth and provide adjacent land for locks, as needed.<sup>131</sup> By autumn 1932, the Beauharnois Canal – 15 miles long and 3,300 feet wide – traversed the flat lands south of the Cedar Rapids, and the turbines in the “Big Beau” powerhouse produced electricity. Over the following years, company engineers methodically added more turbines and used an increasing amount of the river's flow. Meanwhile, a suction dredge, defiantly named the *R.O. Swezey*, continued to deepen the river to the Seaway's proposed navigable depth.<sup>132</sup>

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<sup>130</sup> Reported in: *Toronto Globe*, May 22, 1931, NEMHC, *GLSLTA Records*, Collection #S3040, Box 30, Folder 15, “Newspaper Clippings: Ontario, 1919-1939.”

<sup>131</sup> See: Wright, *The St. Lawrence Waterway*, 237-238; and GLSLTA. *Seaway News*, March 12, 1932; NEMHC, *GLSLTA Records*, Collection #S3040, Box 29, Folders 7-11, “Seaway News, Sept. 1919- July 1932.”

<sup>132</sup> T.D. Regehr, *The Beauharnois Scandal: A Story of Canadian Entrepreneurship and Politics* (Toronto: University of Toronto Press, 1990), 96-97.

During the Beauharnois' construction, in 1929, Craig toured the site and met with Sweezy. Craig left with a positive impression of the project and its originator. He communicated this impression to President Hoover, who allegedly replied: "Well... that completes the Canadian portion of the work, and leaves only the international section."<sup>133</sup> Hoover's remark proved slightly incorrect, since the Lachine Rapids remained an obstacle to navigation downriver, but the Seaway seemed to inch forward between Lakes St. Francis and St. Louis, and that gave the Tidewater Association and its supporters a reason to cautiously celebrate.

### Treaty Negotiations

Three other developments buoyed the hopes of Seaway enthusiasts. First, the new Welland Canal, which the Laurier administration authorized in 1913, neared completion by the end of the 1920s. Advocates believed that its opening would encourage the federal government to deepen the St. Lawrence to a corresponding depth of 25 feet. The government partially confirmed this belief in 1930, when Canada and the United States worked out an arrangement to simultaneously but independently deepen the Thousand Island Section's channels to 25 feet and to remove obstructions to navigation.<sup>134</sup> Thus when the Welland opened in 1932, deep-water navigation channels extended from Lake Erie to Ogdensburg, NY and Prescott, ON. Hoover and his diplomatic corps had little enthusiasm for this protracted, piecemeal approach and persistently tried to convince King to negotiate a treaty, but the Prime Minister continued to rebuff their advances.

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<sup>133</sup> This exchange was reported to the Tidewater Association's president Henry J. Allen, see: Craig to Allen, July 30, 1929, LoC, Manuscript Division, *Henry Justin Allen Papers*, Collection MSS50781, Box C88, 5 Folders, "Charles P. Craig."

<sup>134</sup> The negotiations for this agreement took three years and many forms. The final arrangement is included in: Canadian note of April 30, 1930 sent as Enclosure 1 of Dispatch 1391, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 293/55.

The second cause for hope came from a tentative resolution of the federal-provincial jurisdiction question. In 1929, engineers from Ontario and the Dominion agreed on a plan for developing the International Section.<sup>135</sup> However, the plan did not resolve the dissonance between the two national delegations of the JBE; in fact, it added additional disparities. Like the Canadian JBE plan, the Dominion-Provincial proposal had two-stages, with an upper dam and powerhouse at Crysler Island, and a lower dam and powerhouse at the head of Barnhart Island. Unlike the Canadian JBE plan, this proposal placed the navigation canal around Crysler Island on the Canadian side, despite an estimated additional cost of \$5-8 million. Nevertheless, Seaway enthusiasts and American officials took the tentative Dominion-Provincial agreement as a positive harbinger for their larger ambitions

Finally, the Canadian federal elections in 1930 reinvigorated the optimism of Seaway supporters in both countries. The Seaway issue featured prominently in the contest between the Liberal incumbent Mackenzie King and his Conservative challenger, R.B. Bennett. In his opening campaign speech, on June 10, 1930, Bennett challenged the Prime Minister to definitively state his policy on the St. Lawrence Seaway – Did he support the project? If so, why the delay? Bennett accused King of taking “refuge after refuge in consultation after consultation,” and claimed that the Prime Minister only “talked platitudes and practiced conferences.” By contrast, he categorically stated that if elected he would take up the project and “complete it at once.”<sup>136</sup> Pushed into a corner, King had to defend his record on an issue whose political pitfalls he spent nearly a decade

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<sup>135</sup> Canada, Conference of Canadian Engineers..., *Report of the Conference of Canadian Engineers on the International Section of the St. Lawrence River, With Appendices, Dated December 30, 1929* (Ottawa: His Majesty's Printer, 1930).

<sup>136</sup> Quotes taken or paraphrased from: J. Castell Hopkins, *Canadian Annual Review of Public Affairs, 1930-1931*, (Toronto: The Annual Review, 1932), 424.

cautiously avoiding. In reaction to Bennett's accusations, King blamed the obstinacy of Premier Ferguson, who, in turn, accused King of acting in bad faith and published his entire correspondence with the Prime Minister on the subject. King responded: "We don't intend to let Premier Ferguson play politics with the matter any longer, nor do we intend to have this great development help up any longer on his account... one of the first measures we will proceed with is the construction of the St. Lawrence waterway."<sup>137</sup> All of a sudden, after nearly a decade of delays, the leaders of both major parties unequivocally endorsed the project and promised immediate action on the Seaway.

King may have had the better argument, but Bennett and the Conservatives won the election. The Seaway was only one issue in an election centered on the Great Depression and divergent strategies for economic recovery. In any case, Seaway advocates and American officials had a new political regime to confront and hope for its sympathy toward their ambitions.

Immediately following the election, Hoover asked Bennett about his willingness to negotiate a Seaway treaty. Bennett did not give a definitive answer until he met Hoover in Washington in January 1931, and his response did not inspire confidence. He pointed out a number of intractable, outstanding Canadian-American issues that made it "extremely difficult" for him to initiate negotiations.<sup>138</sup> The two agreed to a modest exchange of suggestions "for some method of dealing with the situation short of actual treaty negotiation." However, nothing actionable occurred until the following July.

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<sup>137</sup> J. Castell Hopkins, *Canadian Annual Review of Public Affairs, 1920-1930*, (Toronto: The Annual Review, 1931), 105-106.

<sup>138</sup> Some of these problems were – American restrictions on Canadians traveling across the boundary to work in border cities, American methods of enforcing prohibition, the failure of the Senate to approve certain conventions important to Canada (especially the Niagara Falls Convention of 1929), the Hawley Smoot Tariff Act, the Chicago Diversion, etc. See: Memorandum dated January 31, 1931, by Theodore Marriner of a conversation with MacNider (U.S. Minister to Canada), NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/700.

The organized advocacy movement struggled to stay afloat in depression-ridden times; the GLSLTA's funds dwindled but Craig received assurances from his Canadian allies that Seaway negotiations were imminent. In October 1931, Bennett consented to treaty negotiations. Given the unfavorable economic climate and many points of contention between the Canadian and American governments, it is not surprising that Bennett waited a year to open negotiations. Rather, it is surprising that he had the audacity to initiate them at all. Certainly the imminent completion of the Welland and more than \$100 million spent on that project encouraged participation, as did the prospect of unemployment relief. We can only speculate about Bennett's motives, but in his words he presented the Seaway as a rare chance: "There are occasions in the lives of nations as of individuals when decisions have to be made or the opportunity is gone forever."<sup>139</sup>

Obviously, Seaway advocates received the long anticipated news with enthusiasm. Craig wrote to Allen exclaiming: "I join you in three cheers!"<sup>140</sup> Expecting the negotiations to proceed quickly, Craig intensified the activities of the Tidewater Association by opening a new office in Chicago and redoubling their promotional and lobbying efforts. However, the Treaty negotiations dragged into 1932 and with no end in sight, the Tidewater Association's treasurer, R.J. Maclean, warned Craig that the Association would dissolve if the parties did not conclude a treaty soon. Depression-panicked states kept cutting appropriations to the Association and limited funds forced

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<sup>139</sup> The figure quoted is in Canadian dollars. Canada, Parliament, House of Commons, *Debates*, 17 Parliament, 3 Session, Vol.191, No.1 (February 8, 1932), 58.

<sup>140</sup> Craig to Allen, October 12, 1931, LoC, Manuscript Division, *Henry Justin Allen Papers*, Collection MSS50781, Box C88, 5 Folders, "Charles P. Craig."

them to close their new Chicago office.<sup>141</sup> The Association's membership began to complain that Craig did not exert enough pressure on the negotiating parties. Craig and Allen, who directly participated in the negotiations, blamed Canada for the delays. The *Seaway News* (the Tidewater Association's weekly paper) suggested that the Dominion desired to secure concrete power agreements with Quebec and Ontario before signing a treaty.<sup>142</sup>

In July of 1932, Bennett secured a definitive agreement with Ontario. In the International Section, Ontario Hydro would cover the cost of the power works, the federal government would pay for navigation works, and the cost of works serving both purposes would be divided evenly.<sup>143</sup> This simple arrangement effectively resolved the longstanding jurisdictional dispute between Ontario and Ottawa. However, negotiations with Quebec did not proceed in a similar fashion.

Taschereau took the position that no important decisions about the future of the St. Lawrence could be made without Quebec's explicit consent. Calling the river one of the province's "great natural resources" and "natural heritages," he declared that the exclusion of Quebec from the treaty negotiations represented an affront to the province.<sup>144</sup> The Quebec legislature almost unanimously supported the Premier's position, a testament to the persistent antipathy toward the Seaway in French Canada. By

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<sup>141</sup> R.J. Maclean to Craig, February 12, 1932, LoC, Manuscript Division, *Henry Justin Allen Papers*, Collection MSS50781, Box C88, 5 Folders, "Charles P. Craig."

<sup>142</sup> GLSLTA, *Seaway News*, April 9, 1932, NEMHC, *GLSLTA Records*, Collection #S3040, Box 29, Folder 11, "Seaway News, Sept. 1919 – July 1932."

<sup>143</sup> In some cases the costs of joint navigation and power works would be divided 30% to the Dominion and 70% to Ontario. Canada, White Papers, *Agreement made on the 11<sup>th</sup> day of July A.D. 1932, between the Dominion of Canada and the province of Ontario, concerning the development of power in the International Rapids Section of the St. Lawrence River* (Ottawa: His Majesty's Printer, 1932).

<sup>144</sup> Quoted in: "Voice as to Waterway Demanded in Quebec," *New York Times*, November 6, 1931, 8.

a vote of 54 to 7, Quebec's Assembly went on record as opposing the project.<sup>145</sup> At a conference with Bennett in Ottawa, in March 1932, Taschereau reiterated his demand that Quebec's Assembly should receive prior approval of any agreement reached with the United States. Bennett politely but flatly refused. Taschereau responded by publishing a long letter detailing his objections to the international development of the river, but the letter's wide circulation worked against the Premier's intention. For example, the *Ottawa Citizen* declared: "Unless Canada is to be forever held back by provincialism, a halt must some day be called to this disintegrating influence on national unity. Special interest may seem to be strongly entrenched behind Premier Taschereau, but there is a definite limit to this pushing of sectional interests against the nation's interests."<sup>146</sup> Bennett realized that Taschereau's objections did not pose an obstacle to negotiation, and from that point forward he simply chose to ignore him.

One final jurisdictional issue hampered the negotiations: between PASNY and Washington. The State Department organized a number of conferences with PASNY in an effort to resolve their disagreements. PASNY suggested an arrangement analogous to the Dominion-Ontario agreement, but State Department officials declared this unacceptable.<sup>147</sup> The PASNY-Hoover administration quagmire became further complicated by Roosevelt's nomination as the Democratic candidate for the presidency in 1932. Hoover and Roosevelt exchanged acerbic dispatches on the subject. Roosevelt officially came out in favor of the project and advocated a speedy settlement of the

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<sup>145</sup> Reported in: "Hits St. Lawrence Plan: Quebec's Legislature Opposes Immediate Waterway Development," *New York Times*, January 15, 1932, 19.

<sup>146</sup> Montreal *Gazette*, March 30, 1932, NEMHC, *GLSLTA Records*, Collection #S3040, Box 30, Folder 16, "Newspaper Clippings: Quebec, 1921-1939." The press comment on Taschereau's letter, including the quote from the *Ottawa Citizen* is included in: Dispatch 755, Riggs to Stimson, April 8, 1932, NARA II, *Department of State Central Files*, RG 59, 842.9111/73.

<sup>147</sup> See Appendix C of: Power Authority of the State of New York (PASNY), *Second Annual Report*, 1933 (Albany: J.B. Lyon Co. Printers, 1934).

outstanding jurisdictional grievances. Hoover curtly replied with a remark that the *Nation* declared a “triumph of delicate insult.” He said: “Having ardently advocated for over ten years the great work of completing this shipway from Duluth and Chicago to the sea... I am glad to know it will meet with your full support.”<sup>148</sup>

On that somewhat caustic note, treaty negotiations concluded; and on July 11, 1932, Canadian and American officials signed the Hoover-Bennett treaty in Secretary Stimson’s office. Charles P. Craig was the only private citizen present, and he triumphantly, albeit prematurely, declared: “The deed is done.”<sup>149</sup> The city of Duluth MN declared a civic holiday, Massena, NY held a celebration, and Charles P. Craig along with his Tidewater Association felt that their efforts had been validated.

### Things Fall Apart

The Treaty’s provisions reflected Canada’s ability to exact concessions from a more covetous American administration. At Canada’s request, the waterway would be 27 feet deep, the International Section would be developed according to the two-stage plan advocated by the JBE’s Canadian delegation, and all works would be predominantly financed by the United States. Canada received credit for financing the Welland, so the negotiators determined the new appropriations to be \$257,992,000 for the U.S. and \$142,204,000 for Canada. Despite the United States’ larger expenditure, all work on the Canadian side would be done with Canadian labor, engineers, and materials to help alleviate unemployment. The total hydroelectric capacity of the International Section, estimated at 2.2 million horsepower, would be evenly divided. Finally, Canada would be

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<sup>148</sup> “Editorial Paragraphs,” *Nation*, Vol. 135, No.4498, July 20, 1932, 1; PASNY, *Second Annual Report*, 1933, 103-104.

<sup>149</sup> Mabee, *The Seaway Story*, 102.

given joint control over any subsequent diversions from Lake Michigan.<sup>150</sup> When the governments made the treaty's terms public, the *Toronto Mail and Empire* thought it a coup and declared it to be “more favorable than anyone outside a limited government circle could have hoped for... [it] concedes to Canada practically all of Canada's demands.”<sup>151</sup>

The two nations' representatives signed the treaty two days after Congress adjourned for the summer postponing its consideration by the Senate Committee on Foreign Relations until the following November, after the presidential elections. After this hiatus, the Committee opened treaty hearings on November 14, 1932 and they continued intermittently until February 10, 1933. Advocates anticipated much of the opposition encountered at the hearings, because the primary antagonists had not substantially changed since the IJC hearings a decade earlier. However, new sources of opposition emanating from the Mississippi Valley and American West worried Craig and his Association. The provision that included joint American-Canadian control over the diversion of Lake Michigan waters alienated several Tidewater Association members – both Illinois and Missouri withdrew from the Association in 1932 – and because this provision would effectively preclude any possibility of a Lakes-to-Gulf waterway, Seaway support from the Mississippi Valley began to erode.<sup>152</sup> Many Western railroads that favored the project in the 1920s also reversed their position.<sup>153</sup> Advocates attributed

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<sup>150</sup> Figures in USD. For the text of the treaty and supporting materials see: United States, Department of State, Publication No.347. *Great Lakes-St. Lawrence Deep Waterway Treaty* (Washington: GPO, 1932).

<sup>151</sup> *Toronto Mail and Empire*, July 19, 1932, NEMHC, *GLSLTA Records*, Collection #S3040, Box 30, Folder 15, “Newspaper Clippings: Ontario 1919-1939.”

<sup>152</sup> “Articles of Association: With Amendments,” n.d., NEMHC, *GLSLTA Records*, Collection #S3040, Box 25, Folder 8, “Minutes, 1919-1939.”

<sup>153</sup> For testimonials of Western railroads in support of the Seaway, see: GLSLTA, “The Way to the Sea: The St. Lawrence Ship Channel – Railroad Opinion”, *Bulletin No.28*, December 1925, NEMHC, *GLSLTA Records*, Collection #S3040, Box 28, Folder 12, “Bulletins 1919-1934.”

this reversal to pressure from Eastern financial interests and railroads, but their motives remain unclear.

The defection of longstanding supporters of the Seaway movement caused a great deal of consternation among the Seaway faithful. The sweeping Democratic victory in 1932 also meant the Tidewater Association had to laboriously cultivate new contacts among the incoming Congress and executive. Craig and Allen's close relationship with Hoover made this task even more difficult.

In February 1933, the Army Corps of Engineers and PASNY came to a tentative arrangement, under basically the same terms as the Ottawa-Ontario accord. The jurisdictional problem had, at least temporarily, been removed, but it simultaneously assured the determined opposition of private power interests. In his last months in office, President Hoover pressed for the treaty's prompt approval, claiming that it constituted an important public work and a means to alleviate unemployment.<sup>154</sup> On February 10<sup>th</sup>, the relevant Subcommittee recommended the treaty, by a vote of five to two (the votes against came from New York and Illinois). The full Senate Committee on Foreign Relations also reported on it favorably, but it never made it to the Senate floor before Hoover's term expired. On March 4, 1933, Hoover, an engineer who had once called the Seaway "the greatest engineering project of modern history," left the White House without having secured its approval.<sup>155</sup>

The relationship between Craig and Hoover's successor, Roosevelt, had always been precarious and Allen had actively campaigned for Hoover, so even with the

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<sup>154</sup> See: United States, Congress, House of Representatives, *Promotion of Economic Recovery*, House Document 560 72 Congress, 2 Session (February 20, 1933), 1.

<sup>155</sup> Herbert Hoover, *St. Lawrence Shipway, An Address*, New Haven, CT, 1927, 5, NEMHC, *GLSLTA Records*, Collection #S3040, Box 29, Folder 12, "Hoover, Hoover, 1924-1934."

Association's policy of nonpartisanship, it proved difficult to exert pressure or gauge the incoming President's sentiment. Consequently, Craig approached Roosevelt at a distance, through the President's political allies. He also organized a meeting of Midwestern governors from 16 states, which appealed to the new President to resend the treaty to Congress for ratification. The President, preoccupied with an enormous legislative agenda filled with emergency appropriations and massive public works projects, did not resend the Treaty to Congress until January 1934. Along with the treaty, the President included a message advocating its ratification and placing it in context of other regional development projects.

In this message, Roosevelt claimed that the Seaway's power would "serve as a yardstick" to regulate electricity rates in the Northeast. He invoked the Tennessee Valley Authority (TVA), Boulder Dam Project (Hoover Dam), and ongoing work along the Columbia River (reorganized under the Bonneville Power Administration in 1937) as illustrative of the federal government's regional efforts, "controlled by government or governmental authorities" to regulate power rates through public ownership. However, unlike the BPA and TVA projects authorized and funded under Roosevelt's "New Deal," the proposed works on the St. Lawrence River, a transnational space, required a treaty arrangement with Canada.<sup>156</sup> Canada, Roosevelt said, could construct a Seaway wholly within its own territory and without American participation; but, in the development of the river's power and navigation, he preferred to maintain the "historic principle of accord with Canada in the mutual development of the two nations."<sup>157</sup>

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<sup>156</sup> The Hoover Dam was authorized in 1928 by President Coolidge, is operated and maintained by the Bureau of Reclamation, and is abided by the terms of the Colorado River Compact of 1922.

<sup>157</sup> United States, Congress, Senate, *Message from the President on the St. Lawrence Waterway*, Senate Document 110, 73 Congress, 2 Session (January 10, 1934), iii-iv.

Roosevelt's message tried to capture some of the enthusiasm for public works and power and appeal to the widest possible audience. This message represents the strongest statement of Seaway support Roosevelt ever made. He buttressed his argument by including a set of internal, interdepartmental estimations. These included: the proposed waterway would accommodate 60 percent of the world's ocean tonnage and 70 percent of its cargo vessels; would carry between 13 and 23 million tons of American cargo annually; and the transportation savings would exceed \$78 million per year. It would create an American seacoast 3,576 miles in length, convert 30 American cities into seaports, cheaply generate badly needed energy, and promote the industrial development of the St. Lawrence Valley and adjacent regions.<sup>158</sup>

The President's message elicited an overwhelmingly positive response from the Seaway movement. The *Massena Observer* noted that "a new feeling of warmth for a popular President" swept across the St. Lawrence Valley; the *Toronto Globe*, referencing the emphasis on public ownership, claimed that the "magic fire of the Beck spirit" had fallen on Roosevelt.<sup>159</sup> In a letter to the Tidewater Association's Council of States, Craig called the message "all that we could desire," but remained doubtful that the treaty would be ratified.<sup>160</sup>

Debate on the treaty began the day after Roosevelt's transmission and continued over the following two months. The sheer volume of material submitted supporting and

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<sup>158</sup> For the summary included with Roosevelt's message, see *Ibid.*, 1-21. For the full report of the Interdepartmental Board, see: United States, Congress, Senate, *Survey of the Great Lakes-St. Lawrence Seaway and Power Project*, Senate Document 116, 73 Congress, 2 Session (January 11, 1934). The estimated cost of power generation in the report is \$81.57/installed horsepower.

<sup>159</sup> "Hold Dinner for Seaway January 27," *Massena Observer*, January 18, 1934, 1; *Toronto Globe*, January 11, 1934, NEMHC, *GLSLTA Records*, Collection #S3040, Box 30, Folder 15, "Newspaper Clippings: Ontario 1919-1939."

<sup>160</sup> Craig to the Council of States, January 11, 1934, LoC, Manuscript Division, *Henry Justin Allen Papers*, Collection MSS50781, Box C88, 5 Folders, "Charles P. Craig."

opposing the project is astonishing. Related speeches and comments are so numerous that they fill more than 240 pages of the *Congressional Record*, and the telegrams, letters, resolutions, and editorials entered into the *Record* fill an additional 160 pages.<sup>161</sup> The majority of these materials simply recapitulated arguments advanced in Subcommittee hearings during 1932-1933. One outlandish exception is a conspiracy theory – advanced by Senators J. Hamilton Lewis (D-IL) and Huey Long (D-LA) – that claimed, under the auspices of the treaty and with the internationalization of Lake Michigan, Britain sought to reestablish a military foothold on the Great Lakes, and possibly a pretext to recapture American territory.<sup>162</sup>

Although Craig initially shared his pessimism about the treaty's chances with the Association's membership, during the first few weeks of debate many Seaway proponents and the press believed that Roosevelt's appeal would sway enough Democrats to guarantee Senate approval.<sup>163</sup> Privately, Craig worried more about Republican defections than winning over Democrats. He believed the Progressive Republicans could be counted on and, with the President's assistance, possibly three-quarters of the Senate's Democrats, but the disposition of "regular Republicans" remained an unknown variable in his congressional mathematics. Accordingly, Craig wrote to Allen: "Economics has been pitched out the window. This is a political fight. The whole question turns on what is good politics for the Republican Party... I wish you would pull all the strings you can."<sup>164</sup> Allen inquired if he could assist the "regular Republican" and Seaway supporter

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<sup>161</sup> The number of pages was calculated by William Willoughby, see: Willoughby, *The St. Lawrence Waterway*, 154.

<sup>162</sup> For their statements to this effect see: United States, Congress, Senate, *Congressional Record*, 73 Congress, 2 Session (January 17, 1934), 801; (February 2, 1934), 1838-42; (March 12, 1934), 4237.

<sup>163</sup> For example see: "Three Seaway Foes Ready to Aid Pact," *New York Times*, January 20, 1934, 5.

<sup>164</sup> Craig to Allen, February 2, 1934, LoC, Manuscript Division, *Henry Justin Allen Papers*, Collection MSS50781, Box C88, 5 Folders, "Charles P. Craig."

Arthur Vandenberg (R-MI) to improve the treaty chances. Vandenberg's reply did not inspire confidence. The Senator predicted defeat, and claimed "[w]e are up against a cold blooded coalition which knows exactly what it wants and why... Nothing can move it except pressure by the President or a withdrawal of the opposition of the Railroad Brotherhoods."<sup>165</sup> Senator La Follette (R-WI) later commented that the "greatest lobby in the history of this nation," comprised of railroads, sectional interests, and private utilities, descended on Washington to defeat the treaty.<sup>166</sup>

For his part, the President enlisted the chairman of PASNY, Frank P. Walsh, a former labor lawyer, to personally appeal to the powerful Railway Labor Executives Association to drop its opposition. When that failed, Roosevelt invited this Association's leadership to the White House to persuade them, but his direct exhortations also proved unsuccessful. Roosevelt also directly called on Senators opposed to the treaty. For example, Senator Hattie Caraway (D-AK) allegedly told Roosevelt that she could not support the treaty, but promised to "have a bad cold" on the day of the vote.<sup>167</sup> His other meetings proved less successful and shortly before the appointed day of the Senate vote – March 14, 1934 – in the face of opposition that seemed insurmountable, Roosevelt gave up the fight.

The morning of the vote Roosevelt held a press conference. When a journalist asked President to comment on the almost certain defeat of the treaty that afternoon, he said: "Whether the thing goes through this afternoon or not makes no difference at all,

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<sup>165</sup> Arthur Vandenberg to Allen, January 29, 1934, LoC, Manuscript Division, *Henry Justin Allen Papers*, Collection MSS50781, Box C97, 2 Folders, "Treaty Correspondence."

<sup>166</sup> Quoted in: PASNY, *Annual Report, 1945*, (Albany: J.B. Lyon, 1946), 26.

<sup>167</sup> This story was shared in: Craig to Biona Hull, March 5, 1934, LoC, Manuscript Division, *Henry Justin Allen Papers*, Collection MSS50781, Box C97, 2 Folders, "Treaty Correspondence."

because the St. Lawrence Seaway is going to be built just as sure as God made little apples.”<sup>168</sup>

The Senate voted that afternoon, the final count – 46 ayes, 42 nays, and 8 abstentions.<sup>169</sup> Far short of the two-thirds required for ratification, the Senate unambiguously rejected the treaty.

*The Death of a Salesman, the Autopsy of a Movement*

It is difficult to ascertain all the reasons for the treaty’s failure. The fact that many Americans perceived that it favored Canada did not help, and the provision that placed diversions from Lake Michigan under joint Canadian-American control led to a substantial defection of support. The arrangement with PASNY lent tacit support to public power, and in combination with Roosevelt’s public power initiatives elsewhere, set private power interests resolutely against the treaty. Some Republicans simply opposed Roosevelt’s legislative agenda, even though the treaty bore Hoover’s name. The Depression era context undermined the project’s perceived value since grain production had substantially declined and power existed in surplus. Analysis of the vote reveals that sectional factors continued to underscore the debate – 25 of the opposing votes came from Atlantic states, and another 10 from the Mississippi Valley. Finally, railroad interests and their labor organizations distributed anti-Seaway propaganda and mobilized opposition to the treaty.

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<sup>168</sup> Franklin D. Roosevelt, “Excerpts from a White House Press Conference, March 14, 1934,” *The American Presidency Project*, Gerhard Peters and John Woolley eds., accessed April 14, 2014, <http://www.presidency.ucsb.edu/ws/index.php?pid=14829>. Also reported in: “Treaty Foes Win Easily,” *New York Times*, March 15, 1934, 1.

<sup>169</sup> United States, Congress, Senate, *Congressional Record*, 73 Congress, 2 Session (March 14, 1934), 4475.

However, focusing exclusively on the opposition neglects the existence of a well-organized, influential movement working for the treaty's passage. The Tidewater Association executed an extensive propaganda and lobbying campaign directed toward lawmakers and the public. In the face member state defections, unfavorable political changes, and mounting opposition its leadership worked tirelessly to secure the treaty's approval. In fact, the Association essentially bankrupted itself, relying on volunteers and increasingly modest contributions from its membership in their push for ratification.

Despite all this activity, the treaty's defeat led to an intense round of recriminations among Seaway supporters – and they placed Charles P. Craig at the center of this reevaluation. As the *de facto* leader of the Tidewater Association and the most prominent Seaway advocate for the previous fifteen years, the defeat was especially “heartbreaking” for Craig. Perhaps unjustly, much of an embittered Seaway movement identified Craig with the treaty's failure and sought to depose him. The main source of opposition to Craig's continued leadership came from Great Lakes Harbor Association. The Harbor Association had been formed to combat Chicago's diversion of Lake Michigan waters, but after the Supreme Court limited the diversion in 1930, they turned most of their attention to Seaway promotion. Initially, Craig took a conciliatory path and offered to link the Tidewater and Harbor Associations, but his efforts failed and a sizable rift opened between competing centers of advocacy.<sup>170</sup>

As the feud between Seaway leaders and associations became more entrenched, Craig's position rapidly deteriorated. The Tidewater Association's financial support

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<sup>170</sup> Craig offered to join the organizations under the leadership of William George Bruce, the Harbor Association's president and a founding member of the Tidewater's Executive Committee. In a calculated political move, Craig offered Bruce the Tidewater Association's presidency. Bruce was a Democrat, an asset in current political climate, and under this plan, Craig would retain the executive directorship of the Tidewater Association.

evaporated, forcing Craig to waive his modest salary and contribute personal funds to keep the organization afloat. Craig's *coup de grâce* came at his own hand. He entertained the idea of postponing power development at the Long Sault, in favor of immediately constructing navigation canals on the American side of the International Section, and allowing Canada to complete the rest of the Seaway. This idea had the advantage of not requiring a treaty, and Oscar Fleming of the Canadian Deep Waterways and Power Association speculated that Canada might agree to the idea.<sup>171</sup> Craig shared this alternative plan with Roosevelt in a letter, partly hoping that the specter of postponing the Long Sault development, one of the President's pet projects, would motivate the President back into action.<sup>172</sup>

His plan backfired. Roosevelt responded that Craig "should not be led astray," urged irrevocable commitment to "the joint and simultaneous development of navigation and power," and expressed his hope that the Tidewater Association "would not be deceived by people who want no development at all."<sup>173</sup> Clearly, Craig had lost any semblance of the President's confidence; and to make matters worse, Roosevelt widely circulated this correspondence, which further undermined Craig's position in the Seaway movement.

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<sup>171</sup> Craig communicated Fleming's speculation and the details of this idea to Allen: Craig to Allen, July 7, 1934, LoC, Manuscript Division, *Henry Justin Allen Papers*, Collection MSS50781, Box C88, 5 Folders, "Charles P. Craig."

<sup>172</sup> The substance of the plan included in Craig's letter to Roosevelt can be found in: Craig to Fleming, February 16, 1935, *GLSLTA Records*. NEMHC. Collection #S3040, Box 23, Folders 1-46, "Correspondence, Arkansas – Wyoming, 1935"

<sup>173</sup> Quoted from a letter from Roosevelt to Craig, March 8, 1935 in: Mabee, *The Seaway Story*, 118. An online file of President Franklin D. Roosevelt's Seaway correspondence and notes can be found in: "St. Lawrence Seaway, 1934-1939," Hyde Park, NY, Franklin D. Roosevelt Presidential Library and Museum, *Franklin D. Roosevelt Papers as President, The President's Secretary's File (PSF), 1933-1945*, Subject Files, Box 164, Folder 7, available online at the *FDR Library Website*, "FRANKLIN: Access to the FDR Library's Digital Collections," accessed April 14, 2014, <http://www.fdrlibrary.marist.edu/resources/images/psf/psfc0109.pdf#search=>.

Craig left Washington in early June 1935 to take an extended trip through the American West. Now in his late seventies, and nearly destitute from using his own funds to prop up the Tidewater Association, Craig would not give up the fight and hoped to use his trip to reinvigorate the Seaway idea out west. In late September, while attending a meeting of the Tacoma Chamber of Commerce, Craig rose to his feet to speak but collapsed from a heart attack. Two days later, on October 1, 1935, Charles P. Craig died.

On the news of Craig's death the *Duluth News-Tribune* proclaimed: "When the waterway is eventually built, it will be a monument to his energy and resourcefulness."<sup>174</sup>

Similarly, the *Massena Observer* printed a long eulogy to Craig:

"The St. Lawrence Seaway-power project suffered a severe blow in the death of Charles P. Craig... Mr. Craig was a driving force in the undertaking which he so ably advocated. He was well known throughout the mid-western section of the country and had the entree to the White House in the interest of the St. Lawrence plans during every administration since that of President Harding. He proved himself to be an able and efficient organizer and was very largely responsible for the progress made by the project in recent years in various sections of the country. It was his ambition once the treaty had been ratified and work was under way, to acquire a home on the banks of the St. Lawrence and spend the remaining years of his life in a country which had become dear to his heart... The passing of Mr. Craig will leave a large void in the ranks of those favoring ratification."<sup>175</sup>

Although his influence had appreciably waned, Craig's death left a vacuum in the Seaway movement. Craig's loyal friend and successor at the Tidewater Association, A.O. Moreaux tried to hold the organization together with the help of Henry J. Allen.

In 1936, at a meeting of pro-Seaway groups in Detroit, Moreaux sought to establish the Tidewater Association as a coordinating body for the activities of all the groups represented. However, the meeting led to the establishment of the "National

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<sup>174</sup> Clipping, marked *Duluth News Tribune*, October 2, 1935, NEMHC, *GLSLTA Records*, Collection #S3040, Collection #S3040, Box 31, Folder 1, "Clippings – Minnesota, General, 1918-1939."

<sup>175</sup> "Praises Work of C.P. Craig," *Massena Observer*, October 17, 1935, 7.

Seaway Council,” on which the Tidewater Association participated as one of nine discrete members.<sup>176</sup> Moreaux could never reconcile the Tidewater Association’s relegation to a subsidiary role or the existence of a superior council, but the future of the Seaway movement belonged to others.

By 1934, the movement stood at the precipice of Seaway authorization; but as the two nations moved toward one another on the issue of St. Lawrence development, powerful sectional and railroad interests undermined their diplomatic accomplishments. However, the interwar period marked a couple of important episodes in the Seaway story. The IJC’s favorable report structured the terms of future discourse and provided epistemic authority to Seaway plans. The IJC’s sanction and JBE’s composite plans reveal the construction of an emerging bi-national envirotechnical consensus that underscored the project. Hydroelectric power production became an increasingly important facet of Seaway dreams, and multipurpose development strengthened the Seaway cause. The “Seaway” became an established discursive fact, an evocative moniker for advocates to rally around and opponents to rally against. Finally, the Great Lakes-St. Lawrence Tidewater Association built a powerful advocacy organization that enlisted influential people and institutions to the movement, and built transboundary networks of support. Although the Association failed to secure its objective, it provided a framework for future efforts.

The Seaway remained materially unrealized, but became increasingly tangible. It attained clear discursive and political form. Interwar advocates constructed a sharper

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<sup>176</sup> Its membership included: the Great Lakes Harbors Association, Great-Lakes-St. Lawrence Tidewater Association, National Grange, Ohio Lake Ports Association, West Michigan Legislative Council, Minnesota Arrowhead Association, Northern New York Federation of Chambers of Commerce, Champlain Valley Council, and PASNY.

Seaway idea and program. They began with a somewhat amorphous dream, transformed it into a discursive fact that carried bi-national sanction, and sold it as a definitive plan – but Congress would not buy it. The following chapter explores the introduction of powerful new forces into the Seaway debate. Intensified demands for hydroelectric power, highways for the movement of mineral resources, the support of big business, and the specter of unilateral development all compelled a reconsideration of the Seaway plan. However, in the meantime, its prospects looked bleak.

By the end of 1938, the Tidewater Association had so thoroughly depleted its financial resources that it could not afford to reprint old bulletins, much less publish new material. The following summer, Allen wrote Moreaux: “I am sorry for the inglorious finish... But it doesn’t seem to be anything we could avoid... I think that before we get the Seaway, it will be necessary to have a new political setup, and a new day in transportation needs.”<sup>177</sup> On that disillusioned note, Moreaux closed the Association’s office in Washington, sold its furniture, and carried its files to his home in Minnesota. Inglorious finish indeed.

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<sup>177</sup> Allen to Moreaux, August 2, 1939, LoC, Manuscript Division, *Henry Justin Allen Papers*, Collection MSS50781, Box C96, Folder 1, “Moreaux, A.O.”

## Chapter 5

### *When the Seaway Goes Through...*

Way back in 1893,  
My pappy sat on his pappy's knee,  
And his pappy said: Now look here, son,  
Things around here are sure to hum.  
I heard news today that'll make you quiver.  
They're gonna build a seaway in the St. Lawrence River.  
Big ships passin' right by our door.  
And we'll all have 'lectric power galore.  
    When the Seaway goes through,  
    It will do a lot for you.  
    You'll be rolling in clover,  
    When the seaway goes through.  
    Oh, what joy it will make!  
    We'll live on ice cream and cake!  
    Our cares will be over  
    When the seaway goes through.

Way back in 1923,  
My pappy took me upon his knee,  
And my pappy said: Now, look here, boy,  
I heard something that brought me joy.  
They were saying at the poolroom today  
They're going to build the St. Lawrence Seaway.  
Now things will boom soon as they begin,  
You can take my word, sure as sin,  
We'll be in money right up to our chin.  
    When the seaway goes through,  
    It will make your dreams come true.  
    You'll have everything rosy  
    When the seaway goes through.  
    When this thing is a fact,  
    We'll all drive a Cadillac.  
    Everything will be cozy,  
    When the seaway goes through.

Last night my son sat on my knee  
And I said, now boy, listen to me:  
In this Seaway business take no stock,  
I can tell you it's just a crock.  
If you live to be a hundred and three,  
The old St. Lawrence Seaway you're never going to see...<sup>1</sup>

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<sup>1</sup> "When the Seaway Goes Through, Written by Stanley Cappiello, Big Hit of Masonic Minstrels," *Massena Observer*, April 10, 1950, 5.

Written for the “Masonic Minstrels” of Massena, *When the Seaway Goes Through* sings a very different Seaway tune than the *Deep Water Hymn* composed in 1895 and presented at Chapter Two’s outset. Over the first half of the 20<sup>th</sup> century, scores of Seaway promoters descended on the St. Lawrence Valley promising cheap power, industrial development, and attendant prosperity. But by mid-century, these promises rang hollow – the Seaway had not materialized, prosperity never followed in its wake, and many locals became disillusioned. The song above evinces a growing sentiment among Valley residents – that the Seaway was a chimera.

Perennial Seaway supporters, the Massena Chamber of Commerce confessed that this Seaway song “was a little embarrassing to us, but you just wait... *When the Seaway Goes Through*.”<sup>2</sup> Despite the Chamber’s unwavering optimism, by the late 1930s, Seaway enthusiasm ebbed on both sides of the border. In 1934, the Canadian government quietly informed the United States that the Hoover-Bennett Treaty’s failure in the Senate “was received by all members of the Canadian Government with evident relief.”<sup>3</sup> Moreover, the election of an unsympathetic Mitchell Hepburn as Ontario’s Premier sapped support in Canada’s only bastion of Seaway enthusiasm.

The Treaty’s defeat and the death of Charles P. Craig left the Seaway movement in disarray, scrambling to reorganize and determine a new course of action. Craig’s death left a significant vacuum in the movement’s leadership and enthusiasm, but a small cadre of dedicated individuals sought to keep the Seaway idea on the political agenda and in the cultural imagination.

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<sup>2</sup> Ibid. (Emphasis added).

<sup>3</sup> Taken from a memorandum written by William Phillips, Under Secretary of State, from a conversation with Mr. Herridge, the Canadian Minister to the United States, on July 11<sup>th</sup>, 1934. United States, State Department, *Papers Relating to the Foreign Relations of the United States, 1934*, IV (Washington: GPO, 1958), 974.

In contrast to the disenchanting lyrics above, and in the face of the Treaty's imminent defeat, President Roosevelt confidently predicted that the Seaway would be built anyway. The Seaway was a *fait accompli* for FDR, the path ordained by Nature, who patiently waited for man to follow. Although mostly unconstructed, the Seaway was an established discursive fact, sanctioned by an emerging bi-national envirotechnical regime and conceptually entrenched, although widely contested, in the bi-national social and political milieu. Roosevelt also noted that segments of the route had already been constructed – including the new Welland Canal, the Thousand Islands, and the Beauharnois; only the Lachine and International Rapids remained barriers to continuous deep-draft navigation between the Great Lakes and salt-water.

Roosevelt's remarks also showcase a discursive continuity with the waterway's earliest proponents and the *Deep Water Hymn* set out in the second chapter. The President stated, "it is obvious that man is going to follow the lead of nature," evincing an argument premised on "nature's perfectibility."<sup>4</sup> Discussed in earlier chapters, the perfectibility idea argues that nature could, and should be perfected through human intervention. Frank Flower's *Deep Water Hymn* posited that the construction of deep-water channels would complete "God's" grand design, and his contemporaries believed that nature and civilization's perfectibility were inextricable. It reconciled the utilitarian with the idealistic and obscured the boundaries between technological and environmental domains.<sup>5</sup> This perfectibility discourse is not specific to the Seaway, but it underscored

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<sup>4</sup> Franklin D. Roosevelt, "Excerpts from a White House Press Conference, March 14, 1934," *The American Presidency Project*, Gerhard Peters and John Woolley eds., accessed April 14, 2014, <http://www.presidency.ucsb.edu/ws/index.php?pid=14829>.

<sup>5</sup> Like Richard White's "Emersonian view of nature", this perfectibility discourse articulated the notion that nature is purified through human action. White, *The Organic Machine*, 35.

the rationale for widespread interventions and an envirotechnical regime that constructed and sustained normative forms of human-environment interaction.

Although ideas about resource use and conservation as well as management regimes changed, the belief that Nature remained an unfinished work, the canvas on which people projected their ambitions, prevailed. Seemingly capricious and sometimes uncooperative, Nature required transformation and pliability to suit the desires and needs of people. Roosevelt's remarks demonstrate the resilience of the perfectibility idea and the continuing impetus to transform an imperfect nature for the benefit of mankind.

Roosevelt's comments also contain another important admission reflected in distinctions he drew between the "Seaway" and a "seaway." The proper noun referred to the international St. Lawrence Seaway project, while the lower case "s" acknowledged Canada's ability and prerogative to build a seaway without American participation. This chapter will demonstrate how the specter of an *all-Canadian* seaway motivated American participation in the international scheme, through the Wiley-Dondero Act of 1954. The narrative below is centered on three interrelated themes that remobilized support for the Seaway idea and secured bi-national legislative sanction following the Second World War and 62-years of nearly continuous political debate. They are: the defense argument that emerged out of World War II; changing market forces and resource distribution/demand, specifically hydroelectricity and iron-ore deposits; and finally, the specter of the all-Canadian route.

There is an ironic subtext associated with each of these themes. Previously, Seaway opponents routinely deployed national defense arguments against collaborative development. For example, Canadian nationalists occasionally claimed that the St.

Lawrence's internationalization would lead to annexation. In 1900, the Army Corps of Engineers rejected the St. Lawrence route in favor of a "more defensible" all-American route that could serve as a line of communication for ships of war. During the Hoover-Bennett Treaty debate, Senators J. Hamilton Lewis (D-IL) and Huey Long (D-LA) argued that the internationalization of Lake Michigan represented a British ploy to reestablish a military foothold on the Great Lakes. Admittedly, most contemporary observers found most of these nationalistic or jingoistic arguments excessively hyperbolic, possibly paranoiac. Nonetheless, this chapter shows the discursive transformation of the Seaway from a possible threat to national defense to an integral component in continental security. Advocates often claimed that the Seaway idea and boundary waters management regime presented a combination to cooperatively perpetuate peace; but here, the Seaway is presented as a tool for the collaborative prosecution of cold war.

The second theme focuses heavily on the discovery of iron-ore in Labrador and Northeastern Quebec. In contrast to the conservation subtext that consistently underscored the Seaway movement and the management regime that sustained it, this impetus for Seaway construction came from an extractive, resource exploitative industry which after almost exhausting one deposit, sought to move on to another. This dynamic resource frontier is reminiscent of the 19<sup>th</sup> century commodity networks that linked urban-industrial centers with hinterlands in an extractive relationship premised on overabundance. Conservationism sought to redress this extractive relationship by deploying science and technology to ameliorate the exploitive excesses of industrial capitalism and conserve resources for future use. In this chapter, the Seaway movement

equivocates on its conservation heritage and tacitly endorses an exploitative relationship with the environment, which created industrial pressure to discover untapped resources and the movement of these commodities to existing industrial centers.

Finally, the specter of the all-Canadian route and apparent Canadian exasperation with American inaction is ironic in light of Canada's earlier track record on the Seaway issue. In the 1920s, Ottawa consistently dithered on the Seaway question, and Canadians displayed widespread indifference or hostility toward the project. Since its bi-national inception, state, commercial, and individual actors located in the Midwestern United States provided the primary driving force behind the Seaway movement and substantially financed it. The newfound Canadian resolution to undertake the navigation project solo maintained a historical connection to the erstwhile dreams of William Hamilton Merritt and his Welland and St. Lawrence canals; but in light of Canada's more recent and consistently tepid response to the 20<sup>th</sup> century Seaway debate, their exasperation appears inconsistent.

This chapter tells the story of how two nations reluctantly forged an agreement to cooperatively construct the Seaway. It explores the changing dynamics behind their motivations to participate, a new assortment of relevant actors, and the envirotechnical system they devised. The St. Lawrence itself, obviously, did not directly participate in the debate, but it conditioned the plans of its participants, who, in turn, imbued it with their visions of its proper arrangement and use. Already a thoroughly socially mediated and intensely managed space, the St. Lawrence Seaway agreement primed the river for transformation on an unprecedented scale. The Seaway debate changed how people

approached and viewed the river, but the idea's incipient implementation irrevocably transformed its long contested "nature."

*Cloaking the Seaway in Defense*

Seven days after Britain's entry into the Second World War, Canada declared war on Germany on September 10, 1939. Mackenzie King purposefully withheld Canada's declaration to signify the country's independent prerogative in the conduct of its foreign affairs. Almost immediately following Canada's declaration, Premier Hepburn lifted his objection to the Seaway idea on the assumption that the province's anticipated wartime industrial expansion would require new sources of hydroelectric power.<sup>6</sup> In Quebec, Maurice Duplessis, the leader of the Union Nationale Party and a staunch opponent of the Seaway idea, suffered an electoral defeat at the hands of the Liberal Party led by Adélard Godbout. Godbout espoused a more sympathetic position toward federal initiatives, including the revitalization of the Seaway idea under the auspices of war. This wartime reversal of sub-federal opposition in the legislatures of Quebec and Ontario and the anticipated demand for hydroelectricity reasserted the Seaway into the bi-national conversation.

By October 1940, the United States and Canada reached an informal agreement to initiate engineering studies at the Long Sault.<sup>7</sup> Officials acknowledged that it would take

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<sup>6</sup> Hepburn qualified his reversal and made three specific conditions for his Seaway support – 1) a new cost sharing agreement between the Dominion and Ontario 2) Ontario be permitted to divert water from the Albany River basin into the Great Lakes and increase their diversion for power production at Niagara in an equivalent amount 3) that the Canadian and American governments allow Ontario to export power at Cornwall and recall the power being exported at Niagara. King to Hepburn, October 17, 1939, and Hepburn to King October 28, 1939, in: Canada, Parliament, House of Commons, *Correspondence and Documents Relating to the Great Lakes-St. Lawrence Basin Development, 1938-1941* (Ottawa: E. Cloutier, 1941), 50-54.

<sup>7</sup> United States, Department of State, "Great Lakes-St. Lawrence Waterway Project," *Department of State Bulletin*, III (October 19, 1940), 316. For the agreement's background see: United States, State

years to produce the Long Sault's power, so preliminary surveys needed to be completed immediately.<sup>8</sup> Accordingly, the Roosevelt administration allocated \$1 million from the Federal Power Commission's (FPC) special defense fund and instructed the Corps of Engineers to initiate engineering studies. By early November, the Corps established a temporary office in Massena, NY, and assigned several engineers to the project. The engineers quickly drilled for geological samples on Barnhart Island, took soundings of the River's depth, surveyed the landscape, and excavated test pits along the shore. The Corps spent over 18 months testing and delineating the geologic and hydrologic features of the River and adjacent landscape, creating what a commentator called: "one of the most test-scarred rivers in history."<sup>9</sup> After a half-century of nearly continuous study, engineers re-scrutinized the St. Lawrence.

Roosevelt hoped to develop the river's power in advance of navigation to satisfy pressing defense needs, but assured Seaway proponents that independent power development would not imperil future navigation expansion. Ironically, five years earlier, Roosevelt had remonstrated Craig's suggestion of separating of the Seaway's power and navigation components. The Seaway Council, an amalgamation of Seaway advocacy groups left in the wake of the Craig's death and the Tidewater Association's collapse, split over the separation question and never fully recovered. To protest the power-first proposition, Midwestern Seaway advocates organized a conference in Detroit in December of 1940. Conference organizers asked Roosevelt to send a statement of Seaway support and a clarification of his position.

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Department, *Papers Relating to the Foreign Relations of the United States, 1940*, III (Washington: GPO, 1958), 974.

<sup>8</sup> In a message to Congress, Roosevelt pointed out that the peak demand was anticipated to occur in 1945; and in order to produce power by that date, investigations had to begin immediately. See: *Ibid.*, 316-317.

<sup>9</sup> Mabee, *The Seaway Story*, 136.

At the conference, Assistant Secretary of State, Adolf Berle, read Roosevelt's message. This message unambiguously laid out the defense argument and reincorporated navigation into the scheme. The message began with a simple declarative statement: "It is now a vital necessity. The United States needs the St. Lawrence Seaway for defense." The president justified the re-inclusion of navigation by claiming that the United States needed this "great landlocked sea" as a site to "build ships and more ships." He argued that, if given ocean-access, Great Lakes shipyards could supplement overtaxed coastal shipyards, and would provide proximity to "sources of supply of labor, raw and finished materials." Most importantly, these facilities would be "further removed from possible attack." Finally, Roosevelt reiterated the country's pressing need for increased power production, especially to "produce aluminum and more aluminum" for their ambitious airplane construction program.<sup>10</sup>

Roosevelt proceeded to castigate those implicated in the failure of the Hoover-Bennett Treaty: "What we would not give today... if the great St. Lawrence turbines were already in place, steadily revolving under the drive of St. Lawrence waters now running to waste, producing every hour of the day 1,000,000 horsepower to supply the expansion of our essential defense industries. Had the project been started in 1934, as we urged, it would be complete." Moreover, he again situated the Seaway in the context of other regional megaprojects, "such as the Tennessee Valley in the Southeast, Boulder [Hoover] Dam in the Southwest, and the Columbia River projects in the Northwest," which he called the "great national defense assets of this continent." This represents an expanded view of what constitutes defense infrastructure, commensurate with the

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<sup>10</sup> Franklin D. Roosevelt, *The Public Papers and Addresses of Franklin D. Roosevelt...* 1940, Vol.IX, Samuel I. Rosenman, ed. (New York: Random House, 1941), 599-602.

doctrines of total war. The sites of hydroelectric generation, materials and spaces for ordnance production, and safer havens from enemy intrusion became inextricably tied to an emergent military-industrial complex. In short, the President discursively enlisted the Seaway, along with other regional megaprojects, into an incipient war effort.

Roosevelt anticipated criticism from Seaway opponents, by responding: “Selfish interests will tell you that I am *cloaking this great project in national defense* in order to gain an objective which has always been dear to me. But I tell you it has always been dear to me because I recognized its vital importance to the people in peace and in war.”<sup>11</sup> Roosevelt’s claim to have “always” held the Seaway dear appears disingenuous in light of his earlier record, but he clearly cloaked the project in national defense. He placed the Seaway into a larger discourse centered on the arsenal of democracy, which included American industry and civil works projects, in addition to military might. In short, Roosevelt crafted a more expansive idea about what constituted national defense, and the Seaway debate fell within its purview.

Roosevelt was not the first to grasp strategic value of the Seaway. The traffic congestion and power shortages experienced during the First World War helped motivate the most vigorous era of Seaway advocacy. In a 1924 address to the Detroit Board of Commerce, Alfred Crozier, a New York entrepreneur and waterway advocate, summarized an earlier anticipatory defense argument. Crozier presciently claimed: “Another world war is in the making... The highest American military and naval authorities warn against the danger of having such factories located near the Atlantic, Pacific or Gulf coasts... The safety of the Republic, therefore, and the general welfare require that to a larger extent the country’s great industries be developed inland, in the

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<sup>11</sup> All quotes taken from FDR’s message reproduced in: *Ibid.*, 599-602.

region of the Great Lakes. That makes it necessary to complete as soon as possible the lakes-to-sea deep waterway.”<sup>12</sup> Crozier’s forewarning focused on the geographic redistribution of the nation’s centers of wartime production, and claimed the Seaway could serve as a vital line of communication between Great Lakes industries and the war effort.

Of course, Crozier’s address did not carry the weight or contextual urgency of Roosevelt’s message; however, it does establish a precursor to Roosevelt’s entrenchment of continental defense as a primary consideration in the Seaway debate. Following the President’s message, the Detroit conference thoroughly incorporated his defense emphasis into their resolutions. Moreover, they reasserted the indivisibility of the navigation and power components of the Seaway and urged their simultaneous construction.<sup>13</sup>

Three months later, in March 1941, Canada and the United States signed an executive agreement to complete the Seaway, contingent on congressional and parliamentary approval. This agreement remained on the table until 1952, when an IJC Order of Approval superseded it and precipitated its withdrawal. John C. Buekema, the chairman of the Seaway Council’s executive committee, excitedly declared: “there are

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<sup>12</sup> Crozier gave this address to the Detroit Board of Commerce on February 19, 1924, and it was subsequently published by the GLSLTA. Interestingly, this section on defense does not appear in the rough draft Crozier gave to the Association, but appears in the published version. Respectively, the two citations are: Alfred O. Crozier, “New York and the St. Lawrence Route: An Address Before the Detroit Board of Commerce, February 19, 1924,” NEMHC, *GLSLTA Records*, Collection #S3040, Box 25, Folder 29, “Addresses, New York (Pro-Seaway), 1920-1932”; and Box 28, Folder 10, “GLSLTA Publications – General, 1919-1930.”

<sup>13</sup> Congressman Bernard J. Gehrman of Wisconsin entered the resolutions adopted by the Detroit conference into the *Congressional Record*, see: United States, Congress, House of Representatives, *Congressional Record*, 76 Congress, 3 Session (December 16, 1940), 6878-6879. These points – the defense argument and inseparability of navigation and power are also strongly emphasized in the address given to the conference by John C. Buekema, chairman of the Seaway Council’s Executive Committee, and submitted into the *Congressional Record* by Congressman Albert J. Engel of Michigan, see: United States, Congress, House of Representatives, *Congressional Record*, 76 Congress, 3 Session (December 19, 1940), 6946-6948.

twenty years of hard work, hopes and disappointments back of this document... It is now or never.”<sup>14</sup>

The 1941 agreement differed substantially from the Hoover-Bennett Treaty. To facilitate its passage through Congress, its framers designated it as an “agreement” so passage required a simple majority in the Senate, not two-thirds approval. Reminiscent of the Seaway strategy advanced by James A. Tawney in 1913, detractors disputed the constitutionality of this arrangement. The agreement also called for the construction of one power dam, in contrast to the Treaty’s two-stage plan. The single dam, proponents argued, would be cheaper and more quickly constructed, important considerations under time and cost constraints exacerbated by war. However, the agreement maintained some of the Treaty’s controversial provisions. The United States would pay for construction on the Canadian side of the International Section, PASNY and Ontario Hydro remained the designated agencies to develop the River’s power; and future diversions from the Great Lakes-St. Lawrence basin would be placed under joint Canadian-American control.<sup>15</sup>

The defense argument put the Seaway back on the political agenda and its promoters, revived from their malaise, jumped at the opportunity to lobby for its passage. The Seaway Council published pamphlets hoping to recover support lost during the Treaty debate, Midwestern cities established Seaway committees to promote the agreement, Chicago reversed its position and re-endorsed the project, and several notable advocates formed a “Seaway for Defense Committee.”<sup>16</sup> However, the agreement also

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<sup>14</sup> Quoted in: “J.C. Buekema Encouraged Over Seaway,” *Massena Observer*, March 28, 1941, 8.

<sup>15</sup> The agreement is printed in: Canada, Parliament, House of Commons, *Correspondence and Documents Relating to the Great Lakes-St. Lawrence Basin Development, 1938-1941*, 1-17.

<sup>16</sup> Edward J. Noble, chairman of the Life Savers Corporation and a St. Lawrence Valley native, led the Seaway for Defense Committee. The committee also included a number of prominent individuals including Julius H. Barnes, who led the Seaway movement in the 1940s and early 1950s. See:

remobilized Seaway opponents, who formed the “National St. Lawrence Project Conference – An Organization in Opposition.” Led by a Washington lawyer, Thomas J. McGrath, this organization united the American Association of Railroads, the Mississippi Valley Association, the Lake Carriers Association, the National Coal Association, and several eastern cities’ Boards of Commerce into a cohesive lobby against the Seaway.<sup>17</sup>

As the renewed Seaway debate intensified, these opponents directly challenged Roosevelt’s defense argument. In a publication entitled *For National Defense?* the National St. Lawrence Project Conference questioned the Seaway’s utility as a defense measure as well as the wisdom of allocating manpower, machinery, and materials needed for the war effort into a project that would almost certainly remain unfinished by the War’s end.<sup>18</sup> They critiqued its strategic vulnerabilities and argued that new steam plants could provide electricity for aluminum production much faster than the Seaway. As Roosevelt anticipated in his “cloaking the project in national defense” statement, opponents charged that the defense argument provided a convenient veil for existing ambition.

Additional traditional opponents also resurfaced. French Canadians and Canadian nationalists claimed the project offered a slippery slope toward annexation, and cities along the eastern seaboard claimed it meant disaster for their ports. Alcoa fretted that

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“Congressmen Impressed by Waste of Power in Long Sault Rapids, St. Lawrence River; Favorable Report to Congress Expected,” *Massena Observer*, July 22, 1941, 1; and Mabee, *The Seaway Story*, 133.

<sup>17</sup> The Mississippi Valley Association was a collection of water resource managers and waterway development advocates from the Mississippi Valley. It was renamed Water Resources Associated, and merged in 1971 with the National Rivers and Harbors Congress, becoming the Water Resources Congress. For a record Conference’s full composition and activities, see: “National St. Lawrence Conference (A Nationwide Organization in Opposition),” SLU, *Seaway Collection*, Collection No.40, Sillcox Series, Box 74, Folder 6, “National St. Lawrence Project Conference (An Organization in Opposition).”

<sup>18</sup> National St. Lawrence Project Conference, *For National Defense?* (Washington: The Commission, 1941), 8-12, SLU, *Seaway Collection*, Collection No.40, Sillcox Series, Box 74, Folder 6, “National St. Lawrence Project Conference (An Organization in Opposition).”

federal government would encroach on their market by producing aluminum using publically generated power.<sup>19</sup> In August 1941, the Federal Defense Plant Corporation began to construct a government-owned aluminum plant at Massena, legitimating Alcoa's concern. In the same month, the responsible committee sent the Seaway agreement to the Senate floor by a margin of 17 to 8.<sup>20</sup> The committee incorporated the Seaway bill into the omnibus Rivers and Harbors Bill (H.R. 5993), where it remained until after the attack on Pearl Harbor.

Just prior to the "day of infamy" and the United States' official entry into the Second World War, a Roosevelt staffer suggested five reasons why the Seaway agreement would not pass Congress: 1) extremely active resistance on the part of the amalgamated interests in the National St. Lawrence Project Conference 2) growing sentiment favoring government austerity 3) indifference bordering on hostility from House leaders and the Rules Committee 4) reluctance to face long-term defense necessities 5) lack of strong executive branch leadership on the issue, specifically from Berle (Assistant Secretary of State) and Olds (Chairman of the FPC).<sup>21</sup> Faced with this assessment, Roosevelt temporarily called off the drive for the project. However, in February 1942 and with the United States officially embroiled in World War II, the President once again recommended the passage of Seaway legislation as a "war

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<sup>19</sup> For examples of these sources of opposition see: Paul-Henri Guimont. *La Canalisation du Saint Laurent* (Montreal: L'École Sociale Populaire, 1940), 26-31, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 1, No Folder, "St. Lawrence Seaway 1953-1954." Also see: United States, Congress, House of Representatives, Committee on Rivers and Harbors, *Great Lakes-St. Lawrence Basin, Hearings*, 77 Congress, 1 Session, No.17 (July 30, 31, and August 1, 1941), 1662; and an article explaining Alcoa's opposition in: "A Mellon in the Manger," *Nation*, November 16, 1940, 465.

<sup>20</sup> Reported in: "Seaway Lumped in Harbors Bill," *New York Times*, August 9, 1941, 1.

<sup>21</sup> Wayne Coy wrote this report to Roosevelt on November 21, 1941. As cited in: Mabee, *The Seaway Story*, 135-136.

measure.” By June the Seaway’s chances in Congress remained remote, so Roosevelt tried a different tack.

Roosevelt tried to authorize the Seaway by treaty and special agreement, now he discretely attempted to circumvent Congress and initiate construction under his executive war powers. The Army’s Chief of Engineers drew up an executive order to commence construction, Roosevelt’s staff cleared the idea with Canada – acutely aware of Ontario’s power shortages, the Dominion raised no objection to the plan – and the President looked for revenue sources to fund the project. The issue of financing forestalled Roosevelt’s plan. The President did not have the necessary discretionary funds, and the Department of War refused to reallocate \$50 million (to begin power development alone) for a project that could not be completed until 1945. Without funding the congressional bypass idea fell flat. By October 1942, the President raised serious doubts about the Seaway project’s wartime prospects: “I doubt very much whether, under the present production circumstances of steel primarily, and manpower, whether we can go ahead at the present time.” Roosevelt confessed defeat, but once again asserted the project’s inevitability: “It’s bound to come, because man has the scientific mechanical ability to overcome a handicap of nature.”<sup>22</sup> Here, Roosevelt clearly rearticulated the perfectibility argument, encapsulated by the claim that nature is handicapped and man’s “scientific mechanical ability” compels him to rectify these natural deficiencies. The perfectibility argument and emphasis on science and mechanical power as the tools of transformation reflects the envirotechnical regime’s normative *modus operandi* and the discourse underscoring its efforts to materially entrench the Seaway system.

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<sup>22</sup> Quotes taken from “The Eight Hundred and Fiftieth Press Conference (Excerpts). October 9, 1942” in: Franklin D. Roosevelt, *The Public Papers and Addresses of Franklin D. Roosevelt... 1942*, Vol.XI, Samuel I. Rosenman, ed. (New York: Harper, 1950), 414-415.

Temporarily united by the prospect of advancing the Seaway project under the auspices of continental defense, the Seaway movement's latent internal divisions began to show after this most recent setback. Divided on strategy and priorities, the movement fractured and another bitter period of recrimination ensued. The movement first bifurcated into power-first proponents and advocates who demanded the simultaneous development of navigation and power – effectively disengaging public power agencies from Midwestern support. The most severe rift developed between Richard Malia, executive secretary of the Great Lakes Harbors Association, and the Seaway Council's leadership. Harry Brockel, Milwaukee's Port Director, replaced Malia as the Association's secretary and local law-enforcement had to retrieve the Harbor Association's records from a recalcitrant Malia.<sup>23</sup>

The Seaway Council's budget shrank precipitously, and its representation in Washington, Raymond G. Carroll, questioned the commitment of its leadership and levied all sorts of accusations toward its constituents.<sup>24</sup> In this period, it is hard to follow the shifting alliances, recriminations, and petty disputes among Seaway advocates. With Carroll's unexpected death in December 1943, the Seaway Council lost its representation in D.C., and dissolved shortly thereafter.<sup>25</sup>

Another incarnation of the Seaway movement evaporated, but the Seaway dream proved resilient and advocates regrouped to establish another organization to prolong the Seaway debate – the National St. Lawrence Association. Veteran Seaway promoter

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<sup>23</sup> Malia's replacement is noted in: *Milwaukee Journal*, August 28, 1942, 4. The involvement of local police authorities is commented on in: Mabee, *The Seaway Story*, 137.

<sup>24</sup> By the end of 1942, only Michigan and Wisconsin continued to fund the Council, and only at about \$6,000-8,000/year. See: Mabee, *The Seaway Story*, 138.

<sup>25</sup> Carroll's death was announced in a widely distributed newspaper column, but based at the *Washington Post*, see: Drew Pearson, "The Washington Merry-Go-Round," *Washington Post*, December 20, 1943, 5.

Julius H. Barnes, a long time advocate who appeared before the IJC in support of the project in 1921, led this new organization. N.R. Danielian, the director of a massive Seaway study for the Commerce Department, became the Association's representative in Washington, DC. Finally, in an institutional link to the defunct Tidewater Association, Irene Snyder resumed her duties as the movement's treasurer.

This group coalesced around yet another attempt to introduce Seaway legislation. In August 1944, Senator George Aitken (R-VT) introduced a bill to build the Seaway as a postwar reconstruction project and part of the transition from war to peace.<sup>26</sup> Aitken's bill sought to reassert the Seaway as a remedy for transportation and power inadequacies experienced during the war. This effort cleverly, but unsuccessfully, cloaked the project in reconstruction. Before the new Association could advance their agenda, the Senate committee confined the debate to the bill's constitutionality, and forwarded the bill as an amendment to an omnibus Rivers and Harbors Bill. The Senate defeated the amendment 56 to 25 in December 1944.<sup>27</sup> One of the few votes favoring the amendment from the hostile Mississippi Valley came from Roosevelt's Vice-President elect, Harry S. Truman (D-MO).

Another round of Congressional Seaway hearings commenced in February 1946. Much of the pro-Seaway testimony focused on so-called "lessons of the war" – the cheap and abundant hydroelectric power produced at the TVA, Boulder, Bonneville, and Grand Coulee dams, was contrasted with the shortages experienced in the St. Lawrence Valley, which impeded local production of aluminum. They argued that the almost unlimited

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<sup>26</sup> For a discussion of Aitken's bill (S 1385) and the constitutional differences between a treaty and an agreement, see: United States, Congress, Senate, *Congressional Record*, 78 Congress, 2 Session, (November 16, 1944), 8185-8188.

<sup>27</sup> United States, Congress, Senate, *Congressional Record*, 78 Congress, 2 Session (December 12, 1944), 9243.

shipbuilding demands placed on the nation's shipyards could have been alleviated by the construction of facilities on the Great Lakes, where most of the shipbuilding materials originated. And finally, they pointed out the necessity of an integrated national transportation system to the nation's wartime industrial mobilization.<sup>28</sup> Former President Hoover commented that had the Seaway had been constructed before the war it would have "paid for itself several times over."<sup>29</sup> Moreover, according to the Joint Chiefs of Staff, the Seaway "would have been of material assistance in prosecuting the war," and General Marshall claimed that the absence of a Seaway meant lost lives and ships during the Battle of the Atlantic.<sup>30</sup> During these hearings, Seaway advocates retrospectively invoked the defense argument almost *ad nauseam*, but ultimately, to little effect. Another iteration of Seaway legislation died with the dissolution of the 79<sup>th</sup> Congress.

During the war and its immediate aftermath, the defense and reconstruction arguments failed to secure Seaway approval. However, the piecemeal approach continued to make "inroads" throughout the Great Lakes-St. Lawrence basin. In 1941, Congress authorized the construction of a Seaway-sized lock at Sault St. Marie to upgrade the lock constructed nearly a half-century earlier. The authorization explicitly claimed the upgrade was "in the interest of national defense" and designed to accommodate the movement of iron-ore from Lake Superior to the steel mills along the lower lakes.<sup>31</sup> Construction began in March 1942 and the new "MacArthur" lock opened

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<sup>28</sup> Paraphrased from: United States, Congress, Senate, Subcommittee on Foreign Relations, *Great Lakes-St. Lawrence Basin, Hearings on S.J. Res. 104*, 79 Congress, 2 Session (May 28, 29, and June, 11, 12, 13, 20, 1947), 36, 83-84, 97.

<sup>29</sup> *Ibid.*, 56.

<sup>30</sup> The comments by the Joint Chiefs of Staff and General Marshall are reproduced in: PASNY, *Annual Report, 1947*, (Albany: The Authority, 1948), 119; and PASNY, *Annual Report, 1948* (Albany: The Authority, 1949), 111.

<sup>31</sup> Senator Prentiss M. Brown of Michigan introduced the bill on December 16, 1941. See: United States, Congress, Senate, *Congressional Record*, 77 Congress, 1 Session (December 16, 1941), 9831. It was

to navigation in July 1943. The new lock was 800 feet long, 80 feet wide, and 31 feet deep, corresponding with the Welland's navigation facilities, and replicated the dimensions suggested by the Tidewater Association in 1919.<sup>32</sup>

Once again, an uncoordinated, piecemeal approach yielded tangible results. Waterway developments undertaken haphazardly, did not comprise an integrated system, but taken together constituted a *de facto* Seaway from the upper Lakes to the International Section of the St. Lawrence. The uniformity between the features of the various navigations systems interposed along the boundary waters exposes the envirotechnical regime that discursively and conceptually sustained these discrete interventions. Although the political will to construct and integrate the Seaway remained elusive, the regime defined the terms on which Great Lakes-St. Lawrence waterway development proceeded.

The defense argument failed to mobilize sufficient political support to begin construction of the Seaway proper; its authorization required additional forces explored below. The MacArthur lock, constructed to facilitate the movement of iron-ore from the headwaters of Lake Superior to steel mills along the lower lakes alludes to the vitality of a commodity network that reconfigured the forces and ideas that underscored Seaway advocacy. Combined with an insatiable desire for energy to fuel postwar industrial expansion, changes in resource and energy markets helped resuscitate a beleaguered and discouraged Seaway movement. Defense arguments, solitarily ineffectual, remained in advocates' discursive arsenal, and played a central role in swinging key votes when

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adopted on January 16, 1942, see: United States, Congress, Senate, *Congressional Record*, 77 Congress, 2 Session (January 16, 1942), 428. Finally, it was signed by the President in March and became law [56 *Stat.* 148]. The lack appropriation and upgrade of the American "Soo" locks was in 1906.

<sup>32</sup> "Great Lakes-St. Lawrence Tidewater Association, Report of Minutes, February 4, 1919," NEMHC, *GLSLTA Records*, Collection #S3040, Box 25, Folder 8, "Minutes, 1919-1939."

Congress eventually authorized the Seaway. Moreover, large-scale public work projects accrued in symbolic importance during the incipient Cold War. Extensive highway development is illustrative of this trend and its discursive similarities with Seaway defense rationale are striking. This reveals that many infrastructural projects assumed defense meanings they did not have before the Cold War's onset. In the meantime, changing energy markets and the restructuring of iron-ore extraction and distribution networks reinforced the defense argument and kept the Seaway on the national political agendas of the United States and Canada.

*White Power and the Iron Road*

In the face of Congress's recurrent rejection of Seaway proposals, proponents needed a new "vote-catching" feature. By the end of Second World War, the volume of propaganda that had been circulated on both sides of the debate and fissures within the Seaway movement had so thoroughly obscured the Seaway question that advocates found it difficult to construct a cogent argument. A column in the *New York Times* commented that the Seaway "engendered more controversial heat, display of sectional self-interest, and contradictory supporting evidence than almost any other Congressional issue."<sup>33</sup> Out of this disorder and disarray, Seaway advocates devised financing schemes to mollify the opposition and latched on to shifting hydropower and iron-ore markets to advance their cause. By doing so, they fundamentally changed the terms of the debate, the composition and arrangement of protagonists and antagonists, and the inputs into the envirotechnical regime that promotes and sustains the Seaway system. As advocates reconfigured their arguments, they remade the Seaway movement.

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<sup>33</sup> "The St. Lawrence Seaway," *New York Times*, January 28, 1948, 22.

The first change in tactics, proposed by N.R. Danielian and Senator Arthur H. Vandenberg (R-MI, Chair of the Foreign Relations Committee), addressed cost-based objections by suggesting that the project be financed through self-liquidating tolls. Advocates believed tolls would mitigate the railroad lobby's protest that a subsidized Seaway system constituted an unfair intervention in the transportation market.<sup>34</sup> The Corps of Engineers and PASNY hesitated to support the idea. These agencies worried that these tolls would set a precedent for all federal inland waterways, which historically operated toll-free. However, when Governor Thomas Dewey of New York supported the tolls scheme, PASNY withdrew its objection.

Not entirely novel, the self-liquidating toll idea had been raised in earlier Seaway hearings.<sup>35</sup> However, their official sanction by the State Department, the Seaway movement, and, with the exception of the Corps, government agencies incorporated within the envirotechnical regime made tolls an integral feature of renewed Seaway negotiations.

In January 1947, the United States formally approached Canada to solicit support of the self-liquidating toll scheme. Initially hesitant to support the idea, Canada ultimately adopted the same rationale as their American counterparts – that tolls could quell accusations of unfair subsidization and comported with postwar policies of economic retrenchment. The Canadian government informed the U.S. that they supported the tolls idea in principle, but added an ambiguous caveat: “subject to the conclusion of

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<sup>34</sup> For an example of the Corps' continuing objection to tolls, articulated by General Wheeler, see: United States, Congress, House of Representatives, *Great Lakes-St. Lawrence Basin, Hearings on H.J. Res.192*, 80 Congress, 1 Session, Vol.1 (July 14-18, 1947), 7-8, 12, 17.

<sup>35</sup> For example, see: United States, Congress, House of Representatives, *Great Lakes-St. Lawrence Basin, Hearings before the House Committee on Rivers and Harbors*, 77 Congress, 1 Session, Vol.1 (June 17 to July 9, 1941), 283-284, 287-288, 318-319, 482-488.

satisfactory agreements during the negotiation of the proposed agreement.”<sup>36</sup> Designed to lessen domestic opposition in the United States, the toll idea also reallocated shared costs with Canada.

After obtaining tentative Canadian approval for the toll measure, Vandenberg introduced legislation containing the self-liquidating provision. Immediately, the National St. Lawrence Project Conference, the Seaway related mouthpiece for the railroads, claimed that the tolls would never cover the project’s associated costs. They repeated another point: During the hearings on Senate Joint Resolution 111, Vandenberg’s authorization bill, opponents raised the perennial issue of ice. Harry W. Fraser, chairman of the Railway Labor Executives’ Association, claimed that the Seaway, “if developed, would be navigable for seven months out of year and frozen over during other five months during which the traffic would necessarily be moved by the rail transportation systems.”<sup>37</sup> Seasonality, the St. Lawrence’s principal limiting factor, became a Seaway opposition mantra. In fact, in 1949, opponents adopted the pejorative term “Iceway” to capture this climatic limitation.<sup>38</sup> Like “Seaway,” the Iceway moniker represented an important discursive intervention on the opposing side of the debate – the term evocatively encapsulates a central and recurrent objection to the St. Lawrence proposals.

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<sup>36</sup> Cabinet Conclusions, March 21, 1947, LAC, *Privy Council Office fonds*, RG 2 (R165-0-5-E), Series A-5-a, Vol.2640. Also see: The Secretary of State for External Affairs (C.D. Howe) to the Canadian Ambassador to the United States, No. Ex. 953, April 7, 1947, NARA II, *Department of State Central Files*, RG 59, 711.42157SA 29/4-1847.

<sup>37</sup> United States. Congress. Senate. Committee on Foreign Relations, *St. Lawrence Seaway Project, Hearings on S.J. Res. 111*, 80 Congress, 2 session (May 28, 29, and June 11, 12, 13, 20, 1947), 531.

<sup>38</sup> Coined by Lester Sillcox, this term is discussed in more detail below. See: “‘Iceway’, address presented at the University of Michigan by Lester K. Sillcox, First Vice President, The New York Air Brake Company, May 27, 1949, 28 pages,” SLU, *Seaway Collection*, Collection No.40, Sillcox Series, Box 75, Folder 2, “Speeches, Photos, and Misc.”

Senator Alexander Wiley (R-WI), the Senate resolution's most passionate supporter, complained that the "grounds for opposition seem to be strictly four-F in their basis – fear, fancy, folly, and frustration... Fear of progress, fancy in relying on questionable statements rather than facts, folly because of lack of vision, and frustration because this great Nation will frustrate the ambitions of a few selfish interests."<sup>39</sup> Wiley's invocations of "progress," "facts," "vision," and the elevation of general over parochial interests captured the language of the pro-Seaway forces. This discourse evinces belief in progress through technological intervention and objective analysis, as well as a utilitarian vision that bi-national interest trumps individual or corporate concerns. However, discourse and practice can be inconsistent, and the reconfiguration the Seaway movement quietly undermined the pretense of objective analysis and bi-national interest.

Once again, this round of hearings frustrated the hopes of Seaway supporters, and the Senate voted 57 to 30 to send Vandenberg's resolution back to the Committee on Foreign Relations for further study, effectively quashing the proposal.<sup>40</sup> Following another defeat, the Seaway movement could have justifiably licked their wounds, but Julius Barnes remained undeterred. "Progress is often slow in a democracy," he claimed, adding, "[i]t took fifty years of Congressional debate to authorize the Panama Canal."<sup>41</sup> Even so, the Seaway idea entered in its 56<sup>th</sup> year of congressional debate, and its future prospects did not look promising.

Discussions between New York's Governor Dewey and Ontario's Premier George Drew to develop the International Rapids' power potential independently of navigation

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<sup>39</sup> Ibid., 510.

<sup>40</sup> The motion to recommit the resolution to the Foreign Relations Committee was introduced by Senator H. Alexander Smith (R-NJ). See: United States, Congress, Senate, *Congressional Record*, 80 Congress, 2 Session (February 27, 1948), 1858.

<sup>41</sup> Quoted in: "New Congress May Revive Seaway Bill," *Massena Observer*, March 4, 1948, 11.

further complicated the Seaway's legislative chances. In the wake of the most recent congressional defeat, Dewey and Drew intended to advance a "power priority plan," and let the two federal governments deal with navigation construction at a later date. Both Ontario and New York had acute power demands, experienced shortages and recurring brownouts during the war, and postwar industrial expansion accentuated mutual need for expanded power production. At the end of the war, in 1945, Ontario consumed 9.9 billion kilowatts per annum, this increased to 11.8 billion kilowatts in 1949, and the Department of Trade and Commerce estimated it would consume 15.6 billion kilowatts per annum by 1951.<sup>42</sup> Over the winter of 1947, shortages caused Ontario Hydro to impose serious restrictions on the use of electricity. If industrial development continued to proceed apace, new sources of cheap and abundant power had to be developed quickly, and Ontario Hydro saw the St. Lawrence as the most viable option.

Since 1930, New York's electric-power production had grown at a slower rate than the national average and the per-kilowatt cost to this region's electric consumers rose near the highest in the country in the postwar period.<sup>43</sup> From the perspective of the state government, it seemed unconscionable that a state endowed with two of the continent's best-suited hydroelectric production sites (Niagara Falls and the Long Sault Rapids), would let a significant portion of those waters go to "waste" downriver. Accordingly, Dewey's power priority plan evoked a great deal of interest among his political and industrial contemporaries across the state and regional boundaries.

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<sup>42</sup> "Report: The St. Lawrence Waterway and the Canadian Economy," Department of Trade and Commerce (Economic Research Division), (Government of Canada, January 1951), 18, LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-D-40, pt.14 (FP.1), Vol.6345.

<sup>43</sup> Mabee. *The Seaway Story*. 146.

However, Canadian federal authorities seemed wary of the plan. First, it would nullify the tentative Canada-U.S. agreement reached in 1941 that was still technically before Congress. Under the 1941 agreement, Canada received credit for funds expended on Welland construction (\$132 million) and Dominion officials worried this credit could be jeopardized in cost allocation renegotiation. Second, the separation of navigation and power would appreciably increase the project's total cost – an interdepartmental committee of the Canadian cabinet estimated it would increase the cost to Canada by \$97 million, above the \$575 million allocated by the 1941 agreement.<sup>44</sup> Finally, it worried that reopening the power/navigation jurisdictional issue could revive constitutional questions that had plagued Dominion-Provincial relations prior to the 1941 agreement. Moreover, Quebec's prior consent to develop the Lachine Section would likely evaporate since the province did not stand to benefit from the power-first idea. Accordingly, the Dominion government found itself in a difficult position, aware and sympathetic toward Ontario's acute need for power, but concerned about undermining the favorable Seaway terms already on the table.

Some documentary evidence suggests that Ontario sought to use the power-priority scheme to press the larger Seaway issue. For example, in a letter between Robert H. Saunders, the former mayor of Toronto who became Ontario Hydro's chairman in February 1948, and C.D. Howe, Canada's Undersecretary for External Affairs, Saunders claimed that "Ontario's real motive in pressing for separate power development was to hasten the two Federal Governments toward implementation of the combined power-

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<sup>44</sup> Figures in Canadian dollars. "Draft Memorandum for St. Lawrence Interdepartmental Committee, April 20, 1948," LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-Q-40C, pt.1.1, "St. Lawrence Waterway Project-Interdepartmental Committee, (June 25 1947- April 17, 1952)."

waterway project.”<sup>45</sup> It is conceivable that Ontario used the power-priority idea to leverage bi-national action on the whole Seaway scheme, particularly since joint navigation-power development would substantially lower the province’s share of the project’s cost. However, Saunders’ correspondence with other officials in Ottawa also contravenes this claim. In these letters, he pushes power development at the expense of cooperative action or joint development, leaving ambiguity in the chairman and province’s intention.<sup>46</sup> In any case, on July 16, 1948, Ontario submitted its power-priority application to the Canadian government for transmittal to the IJC and approval under Article III of the Boundary Waters Treaty.

Ten days later, New York submitted a corresponding application to the FPC and State Department.<sup>47</sup> After two months of inaction, President Truman announced his intention to withhold New York’s application from the IJC on the grounds that the whole project – meaning joint power and navigation development – would go through or not at all.<sup>48</sup> This decision gave Canadian officials some breathing room by allowing them to stall on forwarding Ontario Hydro’s application and await congressional action on the 1941 agreement.

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<sup>45</sup> This exchange, from May 5, 1948, is related in: “Memorandum, May 15, 1948,” LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-U-40C, vol.3563, “St. Lawrence-New York-Ontario-Power Priority Plan – Application to International Joint Commission (March, 3 1948 – n.d).”

<sup>46</sup> “Saunders to St. Laurent, December 3, 1948,” LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-U-40C, vol. 3563, “St. Lawrence-New York-Ontario-Power Priority Plan – Application to International Joint Commission (March 3, 1948).”

<sup>47</sup> Memorandum from Foster to Tate: New York State Power Authority’s Application to the International Joint Commission, July 23, 1948, NARA II, Department of State Central Files, RG 59, Box 3302, 711.42157SA 5-148.

<sup>48</sup> Reported in: “Bars Any Seaway Change,” *New York Times*, September 3, 1948, 39. For Truman’s definitive decision to withhold the application, see: Memorandum from Harry Truman and George C. Marshall, December 3, 1948. NARA II, RG 59, *Department of State File*, RG 59, Box 3304, 711.42157 SA 29/11-148 to 711.4216/10-1447.

With the immediate prospect of developing St. Lawrence power diminished, Ontario turned its attention to permanently securing increased diversions at Niagara, which had been augmented as an exigency of war. These diversions fueled the remarkable industrial growth of the Niagara region that began during the war and continued into the 1960s, leading one optimistic commentator to proclaim the Niagara peninsula as “the Ruhr of Canada.”<sup>49</sup> Within three weeks, an exchange of notes between Canada and the United States endorsed an amplified diversion of 4,000 cfs at Niagara, as well as an additional diversion of 2,500 cfs to power facilities at DeCew Falls outside of the navigation season.<sup>50</sup>

The Niagara agreement satiated Ontario’s power hunger for the moment, but the augmented diversion only preserved the *status quo*. Before long, the Prime Minister announced that if Congress did not act on the joint project proposal, Canada would have to seriously consider a power-only project.<sup>51</sup> Governor Dewey, embittered by Truman’s decision to withhold New York’s application and by his loss to Truman in the Presidential race, accused the President “of sabotage against the national safety.”<sup>52</sup> Without this power, he claimed, New York lost business and productive capacity. The demand for hydroelectric power levied a great deal of pressure on the Seaway debate, but

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<sup>49</sup> Quoted in: Karen Dubinsky, *The Second Greatest Disappointment: Honeymooning and Tourism at Niagara Falls* (Toronto: Between the Lines, 1999), 181.

<sup>50</sup> DeCew Falls is a 72-foot drop on the Niagara escarpment near St. Catharines, ON. For the diversion notes exchanged on December 23, 1948, see: “Memorandum to the Minister, March 25, 1948,” LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-K-40C, pt.4, vol.3561, “St. Lawrence – Niagara River Treaty Between Canada and United States – Additional Diversion of Water at Niagara Falls, (January 1, 1948 to November 30, 1949).”

<sup>51</sup> “Text from speech by Mr. St. Laurent in the House of Commons, Friday, 28th January, 1949,” January 29, 1949, LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-D-40C, pt.9, “St. Lawrence River-Niagara River Treaty Proposals – General Correspondence, (January 5, 1949 to December 30, 1949).”

<sup>52</sup> Quoted in and paraphrased from: “Dewey Hits Delay on Plea for St. Lawrence Power,” *New York Times*, December 15, 1948, 1; and “Dewey Condemns Truman on Power,” *New York Times*, September 27, 1950, 25.

Truman's resoluteness for joint navigation-power development forestalled immediate action to address perceived shortages.

The power issue also structured how governments saw their interaction with the river. Experience with the Niagara diversion conditioned bi-national conceptions of their ability to jointly control and manipulate the river for human ends. The envirotechnical system constructed and sustained at this boundary water nexus informed the terms of future manipulation of the river's fast moving current, especially at the Long Sault. Part of the discourse that sustained this system drew on a conservationist preference for renewable, hydroelectric sources of power. Lionel Chevrier, the Canadian minister of Transport, evinced this preference, stating "[c]oal is an exhaustible asset... But white power [hydroelectricity] after development, is inexhaustible."<sup>53</sup>

Lewis Mumford captured the alleged transition from dirty, exhaustible fossil fuels to clean, renewable sources of electricity in his conception of a progression from the "paleotechnic" to a "neotechnic" technological phase. In his 1934 work, *Technics and Civilization*, Mumford sought to delineate and describe specific technological phases and their reciprocal relationship to society and culture.<sup>54</sup> He associated the paleotechnic with a "coal-and-iron complex" and "empirical practice by trail and section;" and the neotechnic with an "electricity-and-alloy complex" (especially aluminum), as well as the application of science and systemization to all domains of experience.<sup>55</sup> In this case, Mumford's analysis posits a progressive view of the history of technology repudiated by contemporary scholars – and eventually Mumford himself – but in wide circulation

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<sup>53</sup> Lionel Chevrier, *The St. Lawrence Seaway*, (Toronto: Macmillan, 1959), 34.

<sup>54</sup> Lewis Mumford, *Technics and Civilization* (New York: Harcourt, Brace & Company, 1934).

<sup>55</sup> These quotes are taken from a newer edition. Lewis Mumford, *Technics and Civilization* (Chicago: University of Chicago Press, 2010), 110, 215-216.

during the Seaway debate. Hydroelectricity held the promise of a cleaner, more prosperous, potentially unlimited energy future; and as the foregoing discussion reveals, kept the Seaway in the political and diplomatic limelight, as well as the cultural imagination.

By the 1950s, Mumford lamented that the neotechnic phase had not displaced the paleotechnic *regime*, claiming new technics had been made to serve antiquated ideals.<sup>56</sup> Thoroughly disillusioned with the promise he once saw in the neotechnic phase, Mumford became a harsh critic of midcentury megaprojects. In his last work on the relationship between technology and civilization – *The Myth of the Machine: Pentagon of Power* (1970) – Mumford unpacks his own paradise lost. He explored the emergence of a “power complex” – the mechanization of nature and automation of humanity in a totalizing system he called the “megamachine.” According to Mumford, a pentagon of ends – power, profit, productivity, property, and prestige – drives this megamachine. Mumford’s perspective seems to have shifted with the Second World War, he wrote: “Up to 1940 it was still possible to regard the continuation and acceleration of modern technology as, on the whole, favorable to human development; and so firmly has this conviction been implanted, so completely has the myth of the machine taken hold of the modern mind, that these archaic beliefs are still widely regarded as well-founded, scientifically accredited, indubitably progressive – in short, practically unchallengeable.”<sup>57</sup> Mumford saw this unreflective view technology as the triumph of the power complex – the entrenchment and normalization of a vision of technological progress without humane values. He sought challenge the “practically unchallengeable,”

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<sup>56</sup> Ibid., 212-213.

<sup>57</sup> Lewis Mumford, *The Myth of the Machine: Pentagon of Power* (New York: Harcourt, Brace, Jovanovich, 1970), 237.

to reveal the darker sides of the power complex's hegemonic megamachine, and offer an alternative vision. Predicated on a move from megatechnics to biotechnics, his alternative required dismantling the megamachine and reconfiguring society to promote human, not mechanical values. According to Mumford, this required a radically different, organic model derived from ecosystems – a society of plentitude not power.<sup>58</sup>

Mumford became increasingly pessimistic about the machines and materials he once hoped would engender humane and socially regenerative regional communities, but held out hope that man's drive to subdue nature through technology could be inverted and technologies would be remodeled on natural systems. Envirotechnical analysis questions this reified view of nature and technology, but Mumford's identification of 1940 as a watershed moment in the history of technics is instructive for the Seaway narrative. By the 1940s, Seaway discourse had the hallmarks of Mumford's pentagon – the defense argument, profit motive, public production of power, and private movement natural resources, as well as a symbol of bi-national technological prestige.

In a sense, the Seaway megaproject epitomizes Mumford's critique; but it also subverts it. The Seaway is not just a projection of mechanical power on a natural landscape, but an envirotechnical system – a symbiosis between the technical and environmental. In physically and discursively constructing the Seaway, the environment defined the realm of technological possibility and technological deployment reshaped the environment. However, the boundaries drawn between the system's natural features and technological artifacts are themselves discursive constructs. The Seaway reconfigured the landscape, revised its spatial and social arrangements, but it did not technologically consume the environment; it modified and integrated existing systems, amplified their

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<sup>58</sup> Ibid., 395.

scale, and embedded technological and natural elements in a system where the boundaries between them are fluid. The regime that sanctioned and sustained this system – in symbol and reality – was transformed by the incorporation of new priorities, ideologies, power relations, and actors. The assimilation of continental defense considerations, increased demands for hydroelectricity, and desired expansion of networks to move natural resources to industrial centers reveal a dynamic regime that sustains the Seaway system and transformed the movement that sought to establish it.

Mumford's identification of 1940 as a turning point is fortuitous for our purposes, since President Roosevelt first advanced the Seaway as a primarily a national defense project in 1940. In 1948, President Truman and his Seaway collaborators sought to resuscitate the defense argument, believing it would resonate most clearly with the public and their representatives in Congress. The Permanent Joint Board on Defense buttressed Truman's redeployment of this argument when they endorsed the dual-purpose project, arguing, "from the point of view of National Defence the completion of the St. Lawrence Seaway and Power Development will be of inestimable value in making possible a greater and more sustained industrial war effort in the event of war."<sup>59</sup> However, a concurrent report from the Canadian Department of Natural Resources revealed a new possible argument for Seaway promotion, the upstream movement of a paleotechnic mineral – iron-ore.

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<sup>59</sup> Established by Mackenzie King and Roosevelt in 1940, the PJBD provides policy recommendations for bilateral defense issues. They endorsed the dual-purpose project in December 1948, the quote comes from a report submitted a month earlier, see: "Strategic Implications of the Development of the St. Lawrence Waterway, November 1, 1948," LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 50075-40, pt.1, vol.4470, St. Lawrence Waterway – Brief for Meeting of Permanent Joint Board on Defence, 1948 (September 13, 1948 to February 21, 1951).

In 1948, a study by the Department of National Resources concluded that the effective exploitation and movement of iron-ore deposits recently discovered in Labrador and Quebec required a deep waterway along the Great Lakes-St. Lawrence.<sup>60</sup> By the 1930s, mining interests along the Mesabi Range – the largest iron range in the United States, located in Minnesota near the headwaters of Lake Superior – acknowledged that the acute rate of depletion of high-grade (mostly magnetite) ore necessitated a search for alternative sources.<sup>61</sup> Accordingly, American steel companies dispatched geologists to prospect for high-grade iron deposits to supplement dwindling Lake Superior reserves. The mineral demands of WWII substantially increased the rate of iron-ore depletion. In 1942, Dr. E.W. Davis, the director of the University of Minnesota’s “Mines Experiment Station,” estimated 550 million tons of high-grade ore remained available for open-pit extraction, and observed that wartime shipments from the head of the lakes approximated 100 million tons annually.<sup>62</sup> This immense market pressure on Mesabi ore accelerated the search for alternate sources.

During the War, the Hollinger Mining Company of Canada began detailed explorations for iron-ore deposits in Labrador and northeastern Quebec. The M.A. Hanna Company of Cleveland, one of the largest concerns on the Mesabi Range, joined the explorations, along with five other American steel companies (National Steel, Republic Steel, Youngstown Sheet and Tube, Wheeling Steel, and Armco Steel).

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<sup>60</sup> Summary of “The Market for Labrador Ore. A Study of the Iron Ore Situation” prepared by H.G. Cochrane (Dept. Reconstruction) and W.M. Goodwin (Bureau of Mines), November 16, 1948, LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-Y-40, vol.4169, “St. Lawrence Deep Waterway – Importance of Quebec Labrador Iron Ore Deposits (November 6, 1948 – April 8, 1952).”

<sup>61</sup> In the 1940s, researchers devised a process to extract the magnetite traces from the low-grade and abundant taconite (a sedimentary iron formation rock). For the recognition of the extent of the ranges depletion, see: *The Milwaukee Journal*, November 8, 1942, 15.

<sup>62</sup> Interestingly, Dr. E.W. Davis is attributed as the creator of the taconite extraction process. Ibid.

Collectively, they established a joint enterprise – the Iron Ore Company of Canada.<sup>63</sup> In a forbidding landscape that Jacques Cartier ominously termed, “the land that God gave Cain,” these ore explorations, literally, hit pay dirt.<sup>64</sup> By 1948, exploratory drilling proved the Quebec-Labrador iron range (also known as the Ungava) a bonanza. In fact, the ore’s quality, quantity, and proximity to the surface resembled the pre-depleted Mesabi Range.<sup>65</sup> In the wake of this strike, the allied companies quickly began to build a 357-mile railroad from Sept-Îles (Seven Islands), QC on the St. Lawrence’s north shore to Schefferville, QC, the site of the Iron Ore Company’s mining outpost.<sup>66</sup> The Quebec North Shore and Labrador Railway (QNS&L) began operation in 1954, and Sept-Îles grew into a major Canadian deep-water port. By 1954, exploratory drilling had demonstrated the Ungava Range’s proven ore tonnage to be 500 million, and experts from Iron Ore Company cautiously estimated a total deposit of 2 billion tons.<sup>67</sup> The “Iron Road to Labrador,” as a writer for *Popular Mechanics* termed it, added a new dimension to the Seaway debate and prompted a rearrangement of the advocacy movement.

Seaway advocates immediately recognized the potential support that the iron-ore discovery could contribute to their cause, and attempted to convince the steel companies of the advantages of a deep waterway to send extracted ore to steel mills already on or near the Great Lakes. N.R. Danielian and the President of the Great Lakes Harbor

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<sup>63</sup> Mabee. *The Seaway Story*, 148.

<sup>64</sup> Cartier allegedly said this in 1534 on his first trip to the New World. I took this quote from: Stephen Leacock, *Montreal, Seaport and City* (Montreal: Doubleday, Doran, Inc. 1942), 10.

<sup>65</sup> By 1948, the explorations had revealed about 300 million tons of proven ore. See: “Minutes from Informal Meeting to discuss the St. Lawrence Seaway project, January 16, 1948,” LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-D-40C, pt.7, vol.3560, “St. Lawrence River-Niagara River Treaty Proposals – General Correspondence, (June 1, 1947-January 16, 1948).”

<sup>66</sup> Shortly afterward (between 1958-1960) they built a 36 mile side-branch (Wabush Lake Railway) to Labrador City to service the Company’s mines near Wabush, NL

<sup>67</sup> By 1954, the Iron Ore Company’s geologists cautiously predicted the total ore tonnage to be two-billion. Reported in: Richard F. Dempewolf, “The Iron Road to Labrador,” *Popular Mechanics*, Vol.101, No.2, (February 1954), 118-124, 260-266.

Association, Daniel Hoan, warned that the depletion of the Mesabi Range meant that mills would have to relocate to the Atlantic coast, if Canada and the United States did not construct the Seaway to convey Labrador ore upstream.<sup>68</sup> Long-time Seaway supporter Joseph Winterbotham of the Champlain Valley Council attempted to convince his friend George M. Humphrey, President of the M.A. Hanna Company and the Iron Ore Company of Canada, that the Seaway best suited his companies' transportation needs.<sup>69</sup>

In early 1948, National St. Lawrence Association president, Julius Barnes claimed that he saw "the writing on the wall" and "by next fall it is possible that some of the influential units of the western steel industry and in the Lake Carriers Association will agree to the conclusion that they must have the security of possible access" to Ungava Ore. Moreover, he claimed, this would offset some of the redoubtable railroad opposition.<sup>70</sup>

On the first claim, Barnes' assumption proved correct. By autumn 1948, Humphrey moved from opposition to enthusiastic support of the Seaway, and brought the allied steel companies with him. Humphrey explained to Barnes that his decision rested on the proof of a sufficient quantity of Ungava ore that could be moved advantageously by the Seaway.<sup>71</sup> Railroad and utility opposition remained undeterred, and the National St. Lawrence Project Conference remarked, in a *New York Times* editorial, that "a small and

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<sup>68</sup> Reported in: "Development of Labrador-Ore Deposits Increases Need for St. Lawrence Seaway, *Massena Observer*, March 10, 1947, 9; and "Middle West Risks Much in Opposing St. Lawrence Seaway, Daniel Hoan Says in Address," *Massena Observer*, October 27, 1947, 12.

<sup>69</sup> Related in: Barnes to C.D. Howe, October 12, 1948, NEMHC, *Julius H. Barnes Papers (1873-1959)*, Collection No.S3025, Box 9, Folder 19, "Howe, Clarence D., 1947-1952."

<sup>70</sup> Quoted in: Mabee. *The Seaway Story*, 149.

<sup>71</sup> Humphrey to Barnes, October 5, 1948, NEMHC, *Julius H. Barnes Papers*, Collection No.S3025, Box 9, Folder 20, "Humphrey, G.M. (George), 1948-1951."

relatively unimportant group of steel interests,” who previously opposed the Seaway as “socialistic,” now supported it simply to protect their investment in the Ungava Range.<sup>72</sup>

In 1952, General Pick of the Army Corps of Engineers testified that Midwestern steel companies would suffer serious losses without a Seaway, noting “[a]mong the various possible sources of foreign ores, the Labrador-Quebec deposits are recognized as the most important now available within the North American continent.” He also repeated Danielian and Hoan’s warning: “Without the Seaway, the Midwest steel industry faces migration to the seaboard... The economic consequences to the Midwest could be tragic.”<sup>73</sup> Under such dire predictions and with the mobilization of the steel industry to the cause, the Ungava discovery provided much needed reinvigoration to a downtrodden Seaway movement.

Before the extent of the Ungava discovery had been demonstrated, the Seaway movement, embodied by the National St. Lawrence Association, had become decrepit with age and was floundering. In 1947, the *Massena Observer* commented that the Association could never fill the “outsized shoes” vacated by Craig and the Tidewater Association or evoke the fighting enthusiasm of a bygone advocacy era.<sup>74</sup> Moreover, after the Canadian Deep Waterways and Power Association folded at the outset of the Second World War, organized American advocates had no Canadian correlate to coordinate efforts north of the border. By 1949, the Association could not always afford to make long-distance phone calls; executives had to forgo salaries; and Barnes, like

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<sup>72</sup> “Seaway Backers Assailed,” *New York Times*, March 7, 1949, 35.

<sup>73</sup> United States, Congress, Senate, Committee on Foreign Relations, *St. Lawrence Seaway and Power Project, Hearings on S.J. Res.27 and S.J. Res.111*, 82 Congress, 2 Session (February 25-29, 1952), 485-488.

<sup>74</sup> The *Massena Observer* is actually quoting an article initially published in the *Detroit News* on January 26, 1947. See: “Mid-West Must Have Seaway, Declares Detroit News in Editorial Supporting Project,” *Massena Observer*, March 6, 1947, 10.

Craig before him, contributed his personal funds to keep the movement afloat; but even with Barnes’ contributions, the Association carried about \$18,000 in debt.<sup>75</sup> Many of its members became inactive, and the Association could not shake the movement’s traditional constituencies, like agricultural associations, out of apathy.

Danielian saw the writing on the wall, and privately confessed to Senator Vandenberg that the National St. Lawrence Association was inadequate to lead a renewed drive for Seaway authorization.<sup>76</sup> Determined to continue the cause, Danielian and Barnes planned a reorganization, or at the very least, a rebranding. In May 1949, the two stalwart advocates organized a meeting at the Mayflower Hotel in Washington, DC, to establish a new advocacy organization – the Great Lakes-St. Lawrence Association (GLSLA). The participants of the inaugural meeting chose Barnes as the honorary chairman of the new association’s board, Lewis Castle, a Duluth banker and Barnes’ protégé, as chairman of the executive committee, and Danielian as executive vice president.<sup>77</sup>

### **Chronology of Seaway Advocacy Organizations**

<i>Dates</i>	<i>Organization Name</i>	<i>Central Figures</i>
1894-1897	International Deep Waterways Association	Oliver A. Howland, Frank Flowers, Lyman Cooley
1912-1914	Great Waterways Union of Canada	Daniel B. Detweiler
1919-1939	Great Lakes-St. Lawrence Tidewater Association	Charles P. Craig, Henry J. Allen, A.O. Moreaux, Irene Snyder

<sup>75</sup> “Financial statements,” NEMHC, *Julius H. Barnes Papers*, Collection No.S3025, Box 9, Folder 12, “Great Lakes-St. Lawrence Association – Financial, 1946-1956.”

<sup>76</sup> Paraphrased from a letter between Danielian and Vandenberg in: Mabee, *The Seaway Story*, 151.

<sup>77</sup> “Interview with Harry Brockel, Milwaukee, November 12, 1959,” SLU, *Seaway Collection*, Collection 40, Mabee Series, Box 52, Folder 3, “Field Notes for the Seaway Story.”

1919-1939	Canadian Deep Waterways and Power Association	Frank Keefer, Oscar Ernest Fleming
1936-1943	National Seaway Council	Richard Malia, Raymond Carroll, William George Bruce, John C. Buekema, Harry Brockel
1943-1949	National St. Lawrence Association	Julius H. Barnes, N.R. Danielian, John C. Buekema, Irene Snyder
1949-1965	Great Lakes-St. Lawrence Association	Julius H. Barnes, N.R. Danielian, Lewis Castle

During the GLSLA's first five months, the largest single contribution (\$5,000) came from M.A. Hanna. Midwestern industries privately disclosed their sympathy for Seaway, but hesitated to overtly support the new Association, fearing retaliation from railroads and utilities. In 1950, the Association spent \$57,000 on lobbying and promotion, whereas the opposing National St. Lawrence Project Conference spent \$42,000.<sup>78</sup> Although initially reluctant to accept the mantle of providing a powerful countervailing force to the railroad and utility lobbies, the steel companies substantially financed the Seaway movement in the early 1950s. By 1951, the Association gained momentum, receiving contributions totaling over \$100,000, as well as the endorsement of Ford, General Motors, and Walter Reuther's United Auto Workers. For the first time, Seaway advocates, like their opposition, had the backing of big business.

Steel interests also independently published and disseminated pro-Seaway propaganda, and had two of their own lobbyists in Washington advocating for the project.

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<sup>78</sup> Mabee, *The Seaway Story*, 153.

For their part, the GLSLA hired twelve employees, and Danielian built a politically tougher organization than Craig's Tidewater Association, willing to forcefully push its agenda and not adverse to political logrolling. As Barnes predicted, the Lake Carriers Association, who had long opposed the Seaway, became divided on the issue after the discovery of the Ungava iron deposits, because they hoped to carry some of its tonnage. The deposits also helped mitigate opposition in Quebec, because it meant the development of the mineral industry in the province's north. It gave Ontario additional incentive to support the Seaway because the Niagara escarpment housed most of its steel industry along the proposed Seaway route.<sup>79</sup> Most importantly, the movement of iron-ore promised the bi-directional flow of commodities carried by the Seaway. Grain would flow downriver to foreign or seaboard destinations, and iron-ore would be moved upriver to Great Lakes steel mills. This practice of load balancing would substantially reduce the number of westbound ships without freight, and provided a major addition to the potential traffic estimates used to justify the Seaway. Finally, Humphrey's conversion to Seaway cause placed a Seaway enthusiast within Eisenhower's cabinet in the position of Secretary of the Treasury.

Clearly, the discovery of iron-ore in Quebec and Labrador provided a boon to the Seaway movement. However, it also fundamentally changed it, and not only in name. The conservationist arguments used to justify the project sit uncomfortably aside the extractive nature of iron-ore mining. The agrarian indignation toward railroads and the promise of more efficient movement of agricultural products that buttressed the Seaway movement's earliest incarnations had been replaced by the interests of big business. The

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<sup>79</sup> For the lessening of Quebec's opposition see: Gennifer Sussman, *Quebec and the St. Lawrence Seaway* (Montreal: C.D. Howe Institute, 1979), 8.

public power contingent diverged from the movement after the power-priority applications had been forestalled in favor of joint construction. Now, it seemed, Seaway support primarily derived from industrial and military considerations. The movement reflected the changing character and concerns of Canada and the United States in the postwar period. It also reflects changed power dynamics observed by Lewis Mumford. The Seaway idea became a symbolic instrument in the ideological politics of the Cold War – an image of North American technological prestige. Primarily supported by agricultural and sectional interests, public power enthusiasts, and conservationists over the first half of the century, the participation of big business recast the project into a network facilitating the extractive processes of industrial capitalism.

Capitalism's drive to compress time and space had always been central to the construction of the continent's transportation networks, but compression for whom and to what ends are questions with dynamic answers. The conservationist, public good arguments did not disappear from Seaway discourse, but the centripetal movement of the steel industry within the advocacy movement tempered their potency. In many respects, the Seaway project evokes Mumford's critique – its international dimension meant it had to be bi-nationally, not regionally planned; by providing power and a transportation corridor it served the forces and excesses of industrial capitalism, instead of subverting them; and under the pretense of objective, scientifically accredited designs it seemed to perpetuate the mechanization of nature. Mumford observed a changing envirotechnical regime – a reconfiguration of the values, institutions, practices, and visions of the natural world that governed the construction and operation of technological systems in specific environments. However, envirotechnical analysis challenges a basic assumption of

Mumford's critique – the boundaries between technology and the environment.

Mumford dreamt of a society built on biotechnics – modeled after ecosystems and interconnectedness. An envirotechnical perspective claims that there is already ecology and interconnectedness in technological systems; in fact, they are inextricable. However, Mumford's analysis of the values and power dynamics that undergirded the prevailing regime are salient – as the regime's inputs and priorities changed, so did the Seaway movement. However, even with powerful new forces sustaining the Seaway cause, the political enigma of Seaway approval remained unsolved.

*The Specter of the All-Canadian Seaway*

The specter of unilateral Canadian Seaway development effectively motivated the United States to participate in the joint undertaking. Stretching back to William Hamilton Merritt, the all-Canadian Seaway idea resurfaced on occasion, especially among Canadian nationalists. A deeply entrenched cultural perception of the St. Lawrence as a “Canadian” river undoubtedly conditioned how Canadians viewed and approached the river. Between 1930 and 1960, a riverine discourse was in wide circulation among the Canadian intelligentsia, one that inextricably linked the river with national identity, cultural imagination, as well as the country's social and economic integration. It is no coincidence that Donald Creighton advanced his “Laurentian thesis” during this period (1937), or that it found a large and receptive audience. Historians Christopher Armstrong, Matthew Evenden, and H.V. Nelles claimed that Creighton elevated the view of the St. Lawrence “into new poetic realms, giving it music, drama, and a brooding sense of destiny denied.”<sup>80</sup>

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<sup>80</sup> Christopher Armstrong, Matthew Evenden, H.V. Nelles, *The River Returns: An Environmental History of the Bow* (Montreal: McGill-Queens Press, 2009), 10.

On the other hand, Canadian environmental historians Stéphane Castonguay and Darin Kinsey have criticized the Laurentian thesis' role in crafting the "neo-Wagnerian myth-symbolism complex Canadian nationalists have woven around the St. Lawrence Valley."<sup>81</sup> However, its myth-building nature aside, historian Janice Cavell argued that, in Canada, "no other interpretation of history has ever been so widely and wholeheartedly accepted as Laurentianism."<sup>82</sup> Given its geography and timing, the resurrection of the all-Canadian Seaway idea comported nicely with this popular interpretation of Canadian history and identity.

Daniel Macfarlane's unpublished Ph.D. dissertation *To the Heart of the Continent: Canada and the Negotiation of the St. Lawrence Navigation and Power Project 1921-1954* closely investigates the entanglements between Canadian nationalism and Seaway negotiations. His central claim is that the requirements of a growing Canadian economy spurred institutional interest in an all-Canadian Seaway alternative, and the concept of "going it alone" struck a nationalistic chord that captured the public and political imagination – engendering what Macfarlane calls "hydrological nationalism."<sup>83</sup> However, concern for the all-Canadian waterway's broader impacts on

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<sup>81</sup> The authors also include Innis' "Staple thesis" and other variants of the metropolitan-hinterland theses in their criticisms. See: Stéphane Castonguay and Darin Kinsey, "The Nature of the Liberal Order: State Formation, Conservation and the Government of Non-Humans in Canada," *Liberalism and Hegemony: Debating the Canadian Liberal Revolution*, Jean-Francois Constant and Michel Ducharme, eds. (Toronto: University of Toronto Press, 2009), 223.

<sup>82</sup> Janice Cavell, "The Second Frontier: The North in English-Canadian Historical Writing," *Canadian Historical Review*, Vol.83, No.3 (September 2002), 385.

<sup>83</sup> It seems that Andrew Biro could be the originator of this term, found in: Andrew Biro, "Half Empty or Half Full?: Water Politics and the Canadian National Imaginary," *Eau Canada: The Future of Canada's Water*, Karen Bakker ed. (Vancouver: UBC Press, 2007), 323. It first appears in Macfarlane's dissertation: Daniel W.D. Macfarlane, *To the Heart of the Continent: Canada and the Negotiation of the St. Lawrence Seaway and Power Project, 1921-1954* (Ottawa: Carleton University Libraries, Unpublished Ph.D. Dissertation, 2010), 35.

American-Canadian relations led the Canadian government to grant the U.S. a participatory Seaway role in 1954.<sup>84</sup>

Hydrologic nationalism nicely encapsulates the culturally entrenched tenets of the Laurentian thesis and the widespread sentiment that the St. Lawrence was a “Canadian” river. The all-Canadian Seaway project provided an opportunity to give this hydrological nationalism physical expression. One American diplomat captured the extent to which this idea seized the Canadian zeitgeist when he wrote: “Canada’s decision to build the St. Lawrence seaway as an all-Canadian project has seized the imagination of Canadians... It is a symbol of their new-found strength.”<sup>85</sup>

“Their new found strength” alludes to the dramatic economic and social transformation of Canada in the immediate postwar period. This transformation is especially profound in terms of their commercial relationship with the United States. Between 1946 and 1951, the value of Canadian goods exported to the United States nearly tripled – from \$888 million to \$2.4 billion – and the percentage of total Canadian exports absorbed by the United States increased from 38% to 59%.<sup>86</sup> These continental economic entanglements provided strength and consternation. The expanding Canadian economy inspired confidence and national self-assuredness, but its contingency on the markets and interaction with United States concerned nationalists who feared cultural assimilation and economic dependence. Between 1945 and 1954, the Canadian population rose from 12 to 15.3 million, and the Gross National Product (GNP) increased

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<sup>84</sup> Paraphrased from: Macfarlane, *To the Heart of the Continent*, 7-8.

<sup>85</sup> George W. Perkins to Secretary (Dean Acheson), “St. Lawrence Seaway and Power Project,” November 1, 1952. NARA II, *Department of State Records – Foreign Service Posts*, RG 84, File 322.2, St. Lawrence Seaway (1952), U.S. Embassy, Ottawa, Classified General Records, 1950-1961.

<sup>86</sup> Statistics, in USD, taken from: John Herd Thompson and Stephen J. Randall, *Canada and the United States: Ambivalent Allies* (London: University of Georgia Press, 2008), 189.

from \$11.9 billion (1948) to \$25.9 billion (1954).<sup>87</sup> Most of this demographic and economic growth centered in the Southern Ontario, located in the Great Lakes-St. Lawrence basin, and placed unprecedented demands on the country's transportation and hydroelectric infrastructure. The St. Lawrence project was geographically, technologically, and conceptually well suited to address these demands.

Accompanying these transformations, Canada experienced a profound political change when William Lyon Mackenzie King resigned in November 1948. King had held power for 22 of the previous 27 years, substantially changed the terms of Canadian-American interaction, and largely determined Canadian Seaway policy since the First World War. His successor and protégé was the aptly named Louis St. Laurent. St. Laurent continued King's trend of increased Canadian activism and internationalism in foreign affairs; a course predicated on a "liberal consensus" in domestic politics.<sup>88</sup> Encouraged by industrial and demographic growth and buttressed by a robust sense of Canadian nationalism underscored by technological and economic confidence, St. Laurent's tenure in office can be characterized as a Canadian era of megaprojects. In addition to the Seaway, the authorization and construction of the Trans-Canada Highway (1949) and Trans-Canada Pipeline (1956) collectively constitute a Canadian form of "high-modernism" embodied in an ambitious postwar nation-building program. However, this program also reveals the tension between Canadian nationalism and the pervasive cultural, economic, and geographic entanglements with the United States.

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<sup>87</sup> Statistics, in CDN dollars, although the exchange rate remained close to par in this period, are taken from: "Historical Statistics of Canada," *Statistics Canada Website*, accessed August 11, 2013, <http://www5.statcan.gc.ca/bsolc/olc-cel/olc-cel?catno=11-516-X&lang=eng>.

<sup>88</sup> Robert Bothwell, *Canada and the United States: The Politics of Partnership* (Toronto: University of Toronto Press, 1992), 48.

The germination of the all-Canadian seaway can be traced to 1947, when Mackenzie King established the Canadian Interdepartmental Committee on the St. Lawrence Project to facilitate communication between relevant portfolios in his cabinet. In May 1949, Committee members circulated and debated a memorandum entitled: “An All-Canadian St. Lawrence Waterway.”<sup>89</sup> This memorandum outlined certain disadvantages in the 1941 agreement – an obstinate Congress had to enact it, and it allocated a higher cost burden to Canada, who would pay “the lion’s share of a joint waterway.” It also described the virtues of an all-Canadian alternative. The proposed all-Canadian waterway would only extend as far as Lake Erie, substantially pay for itself through self-liquidating tolls unilaterally established by Canadian management, power developments could be independently undertaken by New York and Ontario, and since only Canada needed to approve it, work could begin almost immediately.<sup>90</sup> The memorandum estimated the initial federal cost of construction between \$210 and \$275 million – contrasted with \$575 million for the joint project estimated by the 1941 agreement.<sup>91</sup> Members of the Interdepartmental St. Lawrence Committee debated the merits of the all-Canadian proposal, and overtly speculated if the specter of an all-Canadian alternative might precipitate U.S. congressional action on the joint proposal.

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<sup>89</sup> Lionel Chevrier – the first President of Canada’s St. Lawrence Seaway Authority – claimed in his autobiographical account of the Seaway project that during one unspecified night in 1950, he and St. Laurent discussed the many years of Seaway delay, and the Prime Minister flatly said, “We should build the Seaway alone.” According to Chevrier, this is the origin of the all-Canadian Seaway concept, and St. Laurent tasked him with disseminating the idea to get Canadian public opinion and the U.S. “accustomed to the idea of Canada going ahead alone if necessary.” However, in light of documents retrieved from an interdepartmental cabinet committee on the Seaway, Chevrier’s origin story appears oversimplified, even a bit disingenuous. See: Lionel Chevrier, *The St. Lawrence Seaway*, 42-43. The story contained in the source cited in the following footnote refutes Chevrier’s account.

<sup>90</sup> “Memorandum: An All-Canadian St. Lawrence Waterway, May 17, 1949,” LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-Q-40, pt.1.2, vol.6184, “St. Lawrence Waterway Project-Interdepartmental Committee – General File.”

<sup>91</sup> These figures are in CDN dollars, as used in the report.

No immediate action followed, but by the spring of 1949, the idea of an all-Canadian waterway circulated among relevant Canadian policymakers.

Canada's Minister of Transport, Lionel Chevrier, became the mouthpiece for Canada's Seaway ambitions. He gauged public support and American reaction to the all-Canadian notion and, in a speech at Cornwall, ON, in September 1950, first publicly announced the idea, saying: "If Congress does not want to take action, we should begin making plans to go ahead alone."<sup>92</sup> Afterward, Chevrier claimed that the speech did not have his anticipated impact, and interested parties on both sides of the border doubted the sincerity of Canada's resolution to go it alone. Indeed, the Association of American Railroads thought that Canada would not be willing to undertake such an immense project solo.<sup>93</sup> However, the Railroad Association grossly underestimated Canada's postwar ambition, and as Daniel Macfarlane demonstrated, the idea struck a nationalistic chord in Canada.

The all-Canadian Seaway idea began as an inducement for American participation, but its public dissemination and popularity transformed it into a symbol of Canadian pride and self-determination. A 1951 Gallup Poll indicated that 62 percent of Canadians surveyed said they knew the details of the all-Canadian Seaway plan, 55 percent favored unilateral Canadian development, 30.5 percent opposed unilateral development, and 14.5 percent remained undecided.<sup>94</sup> From the poll, it is unclear whether the 30.5 percent specifically disapproved of an all-Canadian waterway or

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<sup>92</sup> Chevrier gave this speech on September 14, 1950. Chevrier, *The St. Lawrence Seaway*, 44.

<sup>93</sup> Gregory Prince, Assistant General Council of the Association of American Railroads in: United States, Congress, House of Representatives, Committee on Public Works, *St. Lawrence Seaway Hearings*, 82 Congress, 1 Session, No.82-83 (Washington: GPO, 1951), 689-690.

<sup>94</sup> Transmittal of Text of Gallup Poll on St. Lawrence Seaway, Enclosure: Gallup Poll of Canada (of June 27), July 28, 1951, NARA II, *Department of State Records – Foreign Service Posts*, RG 84, file 322.2, Box 14, "St. Lawrence Seaway, Canada & U.S. (1951)."

Seaway development under any political configuration. However, the Gallup results demonstrated that the Canadian idea gained traction in the public imagination. In Canada, the predominant Seaway idea was no longer a cooperative, mutually beneficial transformation of the Great Lakes-St. Lawrence basin by two nations, but a unilateral exercise in nation building, much like 19<sup>th</sup> century interventions into the same spaces.

A thorough study by the Canadian Department of Commerce and Trade on the economic implications of the Seaway, completed in early 1951, reported favorably on St. Lawrence development and fortified the all-Canadian proposal. The study estimated that 18.1 million tons would pass through the St. Lawrence headed downriver – principally grain and flour – and 26.4 million tons would travel upriver – mostly iron-ore – an estimated total of 44.5 million tons per year.<sup>95</sup> A corresponding study in the United States placed these estimates even higher, claiming that between 57 and 84 million tons would annually traverse the waterway, and suggested a toll structure that could yield annual revenues between \$36.5 and \$50 million.<sup>96</sup>

Despite these economic endorsements and additional favorable reports, the House Public Works Committee voted 15 to 12 to table another Seaway bill in the summer of 1951.<sup>97</sup> One interesting facet of the foregoing hearings is the deluge of opposition literature presented by affiliates of the National St. Lawrence Project Conference. In this

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<sup>95</sup> Grain and flour constituted 10.4 million tons of the downstream estimates and iron-ore constituted 20 million of the estimated upstream bound tons. The sources actually refer to “short tons” (2,000 lbs), not to be confused with the metric tonne (1,000 kgs). “Report: The St. Lawrence Waterway and the Canadian Economy,” Department of Trade and Commerce (Economic Research Division), (January 1951), 54, LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-D-40, pt.14 (FP. 1), vol.6345.

<sup>96</sup> Their estimates have been rounded to one decimal place for simplicity and are in USD. Arthur H. Schwietert and Leverett S. Lyon, *The Great Lakes-St. Lawrence Seaway and Power Project: Primarily and Analysis of the Testimony Before the Committee on Public Works of the House of Representatives, Eighty-Second Congress* (Chicago: Chicago Association of Commerce and Industry, August 1951), 89.

<sup>97</sup> The Committee held extensive hearings between February 20 and July 11, 1951. For a thorough discussion of the sectional and party politics that led to this particular Seaway defeat, see: Willoughby, *The St. Lawrence Waterway*, 227-231.

propaganda deluge, Lester K. Sillcox, the vice president of the New York Air Brake Company, coined the clever phrase “Iceway.” The term first officially appeared in the transcript of an address submitted to the Committee in 1949.<sup>98</sup> With this simple word play, Sillcox evocatively captured the perennial objection that natural, seasonal obstacles to Great Lakes-St. Lawrence navigation seriously undermined its economic justifiability.<sup>99</sup> Other pamphlets included: *The Great Delusion, Let’s Stop this Billion Dollar Wash Out Before it Starts!*, and *Are We Going Crazy? No – Because this Sentiment Will Prevail!*<sup>100</sup> Most of this opposition focused on disputing the economic and defense rationales for the project, but one interesting tactic questioned the value of the “expertise” deployed in favor of the Seaway. The St. Lawrence Project Conference issued a press release entitled “What is the Worth of a Government Report?” wherein they challenged the accuracy and impartiality of “official” documents.<sup>101</sup> Focusing on Department of Commerce traffic estimates, they contested the alleged expertise behind these documents, suggested collusion between advocates and sympathetic members of the administration, and caustically added: “American taxpayers pay millions of dollars per year for these ‘Government Reports’ ... Heaven help the person who must depend on

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<sup>98</sup> “‘Iceway’, address presented at the University of Michigan by Lester K. Sillcox, First Vice President, The New York Air Brake Company, May 27, 1949, 28 pages,” SLU, *Seaway Collection*, Collection No.40, Sillcox Series, Box 75, Folder 2, “Speeches, Photos, and Misc.”

<sup>99</sup> *Ibid.*, 6.

<sup>100</sup> “The Great Delusion: Facts You Should Know About the Proposal to Build a so-called St. Lawrence Seaway, Association of American Railroads,” October 1947, 31 pages, SLU, *Seaway Collection*, Collection No.40, Sillcox Series, Box 74, Folder 2, “Association of American Railroads;” “St. Lawrence Waterway: Let’s Stop this Billion Dollar Wash Out Before it Starts!”, Association of American Railroads, n.d., pamphlet,” SLU, *Seaway Collection*, Collection No.40, Sillcox Series, Box 74, Folder 2, “Association of American Railroads;” and “Are We Going Crazy? No – Because this Sentiment Will Prevail!,” Assembled and Printed by the National St. Lawrence Project Conference, 1950-1951 [A Collection of Newspaper Editorial Opposition to the St. Lawrence Seaway and Power Project], pamphlet, SLU, *Seaway Collection*, Collection No.40, Sillcox Series, Box 74, Folder 6, “National St. Lawrence Project Conference.”

<sup>101</sup> “What is the Worth of a Government Report?,” National St. Lawrence Project Conference, Press Release, May 6, 1949, SLU, *Seaway Collection*, Collection No.40, Sillcox Series, Box 74, Folder 6, “National St. Lawrence Project Conference.”

the Government hand-outs.”<sup>102</sup> Reminiscent of Governor Nathan Miller’s objections to the IJC report in 1922, the Seaway opposition again questioned the boundaries between advocacy and institutional expertise.

The most recent Congressional rejection of the Seaway proposal occasioned a visit by Louis St. Laurent to Washington to describe the all-Canadian Seaway alternative to President Truman. St. Laurent explained that Ontario’s pressing need for power led to a generous cost-sharing arrangement, if the Dominion completed a Seaway in conjunction with joint power development. The President said he favored regional development like the TVA or BPA, and bi-national participation; but confessed that Congress’s opposition and PASNY’s involvement made an all-Canadian route a “second-best” alternative. Moreover, if Congress did not authorize the project soon, he stated that he would support American participation in the power project and exclusive Canadian construction of navigation facilities along the St. Lawrence.<sup>103</sup> Truman’s frustration and incipient resignation to the all-Canadian proposal represents a turning point in the narrative. For the first time, U.S. officials tacitly acceded to the all-Canadian alternative. By legitimating this prospect, the President remarshaled pro-Seaway forces in the U.S. and simultaneously encouraged Canadian Seaway enthusiasts to proceed without formal American participation.

Canadian officials lost no time in acting on Truman’s conditional support for the all-Canadian proposal. In early December of 1951, Chevrier introduced two bills into the

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<sup>102</sup> They specifically target the work of Paul M. Zeis and disparities between figures included in – “An Economic Assessment of the St. Lawrence Project, 1947” and “Potential Traffic on the St. Lawrence Seaway” (1948). Ibid.

<sup>103</sup> For a summary of their meeting and the tacit agreement it produced, see: United States, Congress, Senate, *Compilation of Documents on the Seaway*, Senate Document 165, 83 Congress, 2 Session (November 15, 1954,) 112-113. Also see: Mabee, *The Seaway Story*, 158.

House of Commons, one to create the St. Lawrence Seaway Authority and another to authorize Ontario Hydro to construct corresponding power works in the International Rapids.<sup>104</sup> Eight days later the bills passed the house unanimously, enthusiastically supported by all opposition parties (Progressive Conservative, Cooperative Commonwealth Federation, and Social Credit), a testament to the popular appeal of the all-Canadian idea.<sup>105</sup> Hedging their bets, the Seaway Authority bill provided legal space for the possibility of American participation, but congressional reciprocation seemed remote. This legislation created a new federal agency the “St. Lawrence Seaway Authority,” part of a new institutional regime that laid the foundation for the construction of a new envirotechnical system. The legislation also vested the Seaway Authority with the power to expropriate land, dig a deep-water navigation channel, and construct locks as well as other navigation works. Before long, this powerful new agency helped to transform the landscape of the St. Lawrence Valley, as well as the lives and spatial patterns of its residents.

The passage of the legislation also signaled to American lawmakers and interested parties that Canada’s commitment to unilateral Seaway development was not all bluff and bluster. Moreover, it further entrenched popular, nationalistic enthusiasm for the idea. As Carleton Mabee aptly described it: Canadians eagerly waited “in anticipation of watching a newly adult Canada remake the continent without Uncle Sam’s aid.”<sup>106</sup>

Ironically, the bills passed without a formal Seaway movement in Canada lobbying for them. American Seaway forces – including the Great Lakes-St. Lawrence

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<sup>104</sup> Chevrier introduced the bills on December 4, 1951. Chevrier, *The St. Lawrence Seaway*, 46-47.

<sup>105</sup> The Governor General gave the bills royal assent on December 21, 1951 and January 11, 1952 (15-16 George VI, Chapter 24), see: *Ibid.*, 48.

<sup>106</sup> Mabee, *The Seaway Story*, 158.

Association – still preferred joint development, but would support an exclusively Canadian Seaway over none at all. The Seaway Authority Act effectively transformed the pro-Seaway argument in the United States from delineating the waterway’s positives to predominantly emphasizing the negative consequences of not participating. President Truman’s remarks on the Canadian legislation encapsulate this discursive change: “The question before the Congress is no longer whether the St. Lawrence Seaway should be built. The question before the Congress now is whether the U.S. should participate in its construction, and thus maintain joint operation and control over this development, which is so important to our security and economic progress.”<sup>107</sup> Truman urged Congress to reconsider the Seaway issue in light of incipient unilateral Canadian development. He argued that American shippers would effectively pay for the project through self-liquidating tolls, and claimed that American participation would forestall the implementation of nationally discriminatory rates.

Truman’s message resonated with Seaway allies in Congress and in February 1952 they placed another Seaway bill before the Senate. Debate on the bill recapitulated well-worn arguments on either side, with the exception of proponents’ emphasis on the Canadian specter and opponents’ contention that Canada was bluffing. In June, the Senate sent this most recent Seaway measure back to committee for further study, by a vote of 43 to 40, once again effectively killing the proposal.<sup>108</sup> N.R. Danielian allegedly stood in the gallery with tears in his eyes, as the Seaway idea suffered another in a long

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<sup>107</sup> White House Press Release, January 28, 1952 – A special message delivered to Congress. See: United States, Congress, House of Representatives, *Message from the President Relative to St. Lawrence Seaway and Power Project*, House Document 337, 82 Congress, 2 Session (January 28, 1952).

<sup>108</sup> United States, Congress, Senate, *Congressional Record*, 82 Congress, 2 Session (June 18, 1952), 7466.

line of congressional defeats.<sup>109</sup> President Truman commented: “I know of no more glaring example of shortsightedness in the history of our nation’s development of natural resources.”<sup>110</sup>

In the wake of this bill’s failure, Chevrier traveled to Washington to assist in the concurrent preparation of Canadian and American IJC applications to develop the Long Sault’s power. The FPC realized that congressional authorization of federal hydroelectric works was hopeless, and encouraged PASNY in August 1952 to reapply for designation as the responsible agency for the construction and operation of facilities to harness the American share of the river’s power. With this entreaty, the FPC implicitly abandoned the regional development idea and acknowledged that there would be no TVA or BPA for the St. Lawrence Valley. In this case, federal regional planning efforts ended where the international border began.

The national governments quickly forwarded their joint applications and the IJC approved them on October 29, 1952.<sup>111</sup> The IJC’s Order of Approval contained a series of conditions intended to safeguard the interests and rights of parties that would be adversely affected by the construction of hydroelectric works in the Long Sault, and increased the power project’s share of the total cost of development. Ostensibly included to forestall local protestation, the IJC set conditions on the variability of water levels and

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<sup>109</sup> Mabee, *The Seaway Story*, 159.

<sup>110</sup> Quoted in: United States. Congress. House of Representatives. *The St. Lawrence Seaway and Power Project, Communication from the President... to the International Joint Commission, Dated June 30, 1952*, House Document 528, 82 Congress, 2 Session (July 1, 1952), iv.

<sup>111</sup> Roger B. McWhorter, from the American delegation, dissented from the IJC’s approval, which was passed 5 to 1. For the Order, dated October 29, 1952, and McWhorter’s dissenting opinion, dated November 19, 1952, see: United States, Congress, House of Representatives, Committee on Public Works, *St. Lawrence Seaway: Hearings on H.J. Res. 104*, No.83-8, 83 Congress, 2 Session (June 11-18, 1953), 76, 89, 449.

erosion. However, these measures did not substantially address local concerns, and Valley communities later experienced spatial and social upheaval.

The Federal Power Commission's consideration of the resubmitted PASNY application did not proceed as expeditiously as the IJC order. Using a range of legal and legislative tactics, Seaway opponents stalled the FPC hearings and challenged their authority to issue PASNY a 50-year license. It took a 1954 decision in the Court of Appeals to resolve this bottleneck.<sup>112</sup> Canadian officials eagerly waited to begin construction and frequently complained about American legal and procedural obstructions. Chevrier wondered: "Will there be no end to these delays?" C.D. Howe claimed that Canadians appeared "completely puzzled" by the United States' inability to "extend the small degree of cooperation" that would allow Canada to begin *their* Seaway.<sup>113</sup> American Seaway enthusiasts saw the delay as an eleventh-hour opportunity to initiate a final effort to secure Congress's approval and American participation.

President Dwight D. Eisenhower took office on January 20, 1953. Concerned by the President's initially tepid response to bi-national Seaway plans, advocates, including his Secretary of the Treasury George Humphrey, sought to win him to the cause. Eisenhower's main concern seemed to be the undertaking's cost; but by May, he fully endorsed the project. He explained that his National Security Council won over his

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<sup>112</sup> For the story about opponents' stalling tactics, see: Willoughby, *The St. Lawrence Waterway*, 243-245, 249-254. For the FPC's July 15, 1953 approval of PASNY's application, subject to certain conditions, see: United States, Federal Power Commission, *Reports: In the Matter of Power Authority of the State of New York, XII* (Washington, DC: GPO, 1953), 172-197. For a report of the Court of Appeals' decision on June 7, 1954, see: "U.S. Power Permit to State Upheld," *New York Times*, June 8, 1954, 1.

<sup>113</sup> Chevrier quoted in: Canada, Department of External Affairs, *Canadian Weekly Bulletin*, February 13, 1953, 5; C.D. Howe was quoted in: C.D. Howe, "Canada's Economic Future: An address made at the Town Hall Auditorium in New York City, April 7, 1953," *Canada: Nation on the March*, Henry T. Heald and H.L. Enman, eds. (Toronto: Clark, Irwin, 1953).

endorsement by recapitulating the defense argument.<sup>114</sup> Like the interstate highway system that bears his name, the Seaway's alleged characteristics as an ideological and defense asset in the Cold War won the President to the cause.

With the President's endorsement and the introduction of two complimentary Seaway bills – one in the Senate from Senator Wiley the incoming Chair of the Senate Foreign Relations Committee, and one in the House from Congressman George Dondero (R-MI) – a final push for American participation commenced. Wiley's bill did not propose a treaty or an agreement with Canada. In fact, Canada had recently withdrawn the agreement pending since 1941 under the assumption that the IJC Order of Approval superseded any existing agreement.<sup>115</sup> The Wiley bill simply expressed a statement that the United States would participate in the construction of major Seaway works in the St. Lawrence's International Section.

The Wiley bill possessed political advantages over previous legislative measures. It omitted any discussion of deepening the connecting channels between the upper Lakes, which cut the project's price tag considerably and simplified the ensuing debate's scope.<sup>116</sup> The IJC's Order of Approval also revised the cost allocation between the project's power and navigation aspects, shifting nearly \$100 million to the power

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<sup>114</sup> For Eisenhower's initial trepidation see: "Wiley Sponsors Bill for Building Seaway," *New York Times*, January 24, 1953, 16; and Anthony Leviero, "Eisenhower Cites Difficulty of Getting Balanced Budget," *New York Times*, February 26, 1953, 1. For his full endorsement see: United States, Congress, Senate, *Compilation of Documents on the Seaway*, Senate Document 165, 83 Congress, 2 Session (November 15, 1954), 149-150. For a summary of his endorsement – based on security reasons, see: Canadian Ambassador to Secretary of State, April 23, 1953, LAC, *Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-D-40, pt.21.3, vol. 6347, "The St. Lawrence Project (Feb. 2, 1953-May 20, 1953)."

<sup>115</sup> "Memorandum for Cabinet. St. Lawrence Project: Canadian withdrawal from 1941, October 31, 1952," LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-D-40, pt.18.2, vol.6346, "St. Lawrence & Niagara River Treaty, St. Lawrence Project – General File (September 2, 1952 - October 31, 1952)."

<sup>116</sup> For this rationale, see: N.R. Danielian to Lewis Castle, January 19, 1953. NEMHC, *Julius H. Barnes Papers*, Collection No.S3025, Box 8, Folder 18, "St. Lawrence Seaway File – Castle, Lewis G., 1948-1957."

authorities and commensurately reducing the cost of federal navigation works. In a sense, the Wiley bill had the advantage of making the Seaway “look cheaper than it actually was.”<sup>117</sup>

The Wiley bill also had a revitalized U.S. Seaway movement working on its behalf. According to the *Congressional Quarterly*, in 1953-1954, the Great Lakes-St. Lawrence Association became the eleventh highest spending lobby in Washington, and contributions to the Association totaled over \$340,000 a year.<sup>118</sup> The Association had the funds and political support to undertake a massive promotional and advocacy campaign, unmatched since the days of Craig’s Tidewater Association. However, their principal argument differed substantially from earlier advocacy efforts – they claimed that since Canada already assured Seaway construction, the United States’ national interest demanded participation and joint control. Moreover, the funds supporting this advocacy push came from different sources. Unlike the multi-state governmental appropriations that funded the Tidewater Association, the steel industry bankrolled the Great Lakes-St. Lawrence Association’s activities.

The Eisenhower administration exerted substantial and direct pressure on members of Congress to support the Wiley bill. Eisenhower won the support of Senator H. Alexander Smith (R-NJ) by emphasizing the project’s defense advantages. The

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<sup>117</sup> This was a criticism levied at the bill by the Association of American Railroads, but it also worked in the bill’s favor. See: Mabee, *The Seaway Story*, 164. In June 1953, Wiley’s committee recommended the bill 13 to 2, but Congress adjourned before the full Senate could consider it. In fact, advocates quietly requested that it not be brought before the full Senate before this adjournment, because they worried that it would be defeated, so the issue was deferred. See: United States, Congress, Senate, *Congressional Record*, 83 Congress, 1 Session (June 3, 1953), 6608-6609. For a description of the recommendation that it be temporarily withheld, see: Danielian to Charles E. Potter, July 28, 1953, NEMHC, *Julius H. Barnes Papers*, Collection No.S3025, Box 9, Folder 3, “St. Lawrence Seaway File – Danielian, N.R., 1948-1957.”

<sup>118</sup> The highest two spending lobbies remained the National Association of Electric Companies and the Association of American Railroads. “Congressional Quarterly” in: United States, Congress, *Congressional Record*, 83 Congress, 2 Session, May 3, 1954, 5682; and *Ibid.*, (June 2, 1954), 7566.

defense argument had now widely circulated for over a decade, but Smith claimed that his unequivocal respect for Eisenhower's views on security swung his vote. Moreover, as a "layman without expert knowledge," he deferred to "pre-eminently expert" defense knowledge of the President.<sup>119</sup> With Eisenhower in the White House the defense argument won new converts, and provided a convenient axis around which opinion turned in favor of the project.

Most surprisingly, Senator John F. Kennedy (D-MA) announced his intention to support the measure. Previously, no Massachusetts Senator or Representative had ever supported a Seaway bill. Kennedy explained his position, saying: "It has been the arbitrary refusal of many New Englanders to recognize the legitimate needs and aspirations of other sections... We cannot continue so narrow and destructive a position."<sup>120</sup> With this simple acknowledgement, Kennedy undermined the old sectional divisions that plagued the Seaway debate since its inception.

The *New York Times* implied that the administration engaged in logrolling to secure the Wiley bill's passage. The newspaper suggested that executive recommendations to develop the Upper Colorado and reevaluate Passamaquoddy Bay's power potential effectively swung Western and Maine votes in the Seaway's favor.<sup>121</sup> The Upper Colorado Reclamation Project carried an initial estimated cost of \$597.7 million and its expected beneficiaries came from Colorado, Wyoming, Utah, Arizona, and New Mexico, and the writer for the *Times* noted "only two of the ten Senators from

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<sup>119</sup> United States, Congress, Senate, *Congressional Record*, 83 Congress, 2 Session (January 6, 1954), 344-345. The following day, Senator Everett M. Dirksen (R-IL) used the same rationale to explain his reversal on the Seaway question: United States, Congress, Senate, *Congressional Record*, 83 Congress, 2 Session (January 7, 1954), 439-446.

<sup>120</sup> United States, Congress, Senate, *Congressional Record*, 83 Congress, 2 Session (January 6, 1954), 238-240.

<sup>121</sup> Clayton Knowles, "Senate Approves Seaway 51 to 33, House Battle Due," *New York Times*, January 21, 1954, 1.

these states voted against the seaway.” Moreover, the day before the Wiley vote, the Senate Foreign Relations Committee recommended the allocation of \$3 million to reevaluate the Passamaquoddy Bay project, and both Maine’s senators, who formerly had opposed the Seaway idea, voted to authorize the Wiley bill.

The *Times*’ insinuation is speculative, but circumstantially plausible and not an isolated claim. For example, an editorial in the *Cincinnati Post* speculated that promises to increase funds for Mississippi Valley flood control swung nine Southern Senators to vote for the Wiley bill.<sup>122</sup> In any case, the Eisenhower administration and the Great Lakes-St. Lawrence Association’s concerted lobbying and promotional campaign gave the Wiley bill momentum in the Senate. On January 20, 1954, the Senate voted 51 to 33 in favor of Wiley’s Bill, and on May 6, the House passed the similar Dondero bill 241-158. On May 13<sup>th</sup>, Eisenhower signed the Wiley-Dondero Act, created an American correlate to Canada’s Seaway Authority – the “St. Lawrence Seaway Development Corporation” – and sanctioned American participation in the Seaway endeavor.<sup>123</sup>

Seaway enthusiasts received news of the bills’ passage and wide margin of victory with jubilation. Throughout the Midwest and the American side of the St. Lawrence Valley towns held parades to celebrate a hard-fought victory and in anticipation of the dawn of a new era of prosperity. The austere Julius Barnes, whom the *Duluth News-Tribune* called the “grand daddy of the Seaway,” remarked: “I am more convinced now than I ever was that approval of the Seaway is the greatest thing that

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<sup>122</sup> Journalist Dick Preston suggested the tacit Mississippi Valley trade-off. *Cincinnati Post*, February 10, 1954, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 54, Folder 7, “Additional Clippings - 1954.”

<sup>123</sup> For the Wiley bill’s passage, see: United States, Congress, Senate, *Congressional Record*, 83 Congress, 2 Session (January 20, 1954), 525; for the Dondero bill’s passage, see: United States, Congress, House of Representatives, *Congressional Record*, 83 Congress, 2 Session (May 6, 1954), 6155. Eisenhower’s signature incorporated the Act as 68 *Stat.* 92.

could happen to the Midwest economy.”<sup>124</sup> The more gregarious N.R. Danielian threw a Great Lakes-St. Lawrence Association sponsored party for “friends of the Seaway,” at the Statler Hotel in Washington, DC. After 62-years of prolonged and acrimonious debate, the Seaway idea became a legal reality on both sides of the border. This legislative sanction enshrined the system’s bi-national character and primed the Seaway to pass from the discursive to the material realm – the physical construction of a bi-national envirotechnical system. The Seaway movement, which had endured persistent setbacks over the previous six decades, had ample reason to celebrate.

By contrast, the Canadian reaction to this news appeared decidedly cool. The *Ottawa Citizen* commented that this historic event “would have been hailed with more enthusiasm in this country had it happened a few years earlier.” The *New York Times* quoted Lester B. Pearson, Canadian Secretary of State for External Affairs, as saying: “Many Canadians don’t think too highly of this last minute participation – either of its timing or its nature.”<sup>125</sup> The nationalistic impulse that underscored support for the all-Canadian Seaway had deeply entrenched the Canadian waterway idea in the imaginations of the public and policymakers. Only after extensive deliberation and discussions did Canada begrudgingly extend a participatory role to the United States.

### *A Reluctant Partnership*

Before the passage of the Wiley-Dondero Act, Robert Saunders, Chairman of Ontario Hydro, responded to American incredulity about Canada’s ability and commitment to build the Seaway alone, saying: “we have borne the cost of two wars. We didn’t receive a five cent piece of lend lease, and donated more than \$2 billion to our

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<sup>124</sup> *Duluth News-Tribune*, May 6, 1954, SLU, Seaway Collection, Collection No.40, Mabee Series, Box 51, Folder 1, “Mabee Notebooks: Minnesota, Duluth, St. Paul.”

<sup>125</sup> Foster Hailey, “Seaway Prospect Stirs Lake Region,” *New York Times*, May 16, 1954, 1.

allies. We have paid our way.” Then, he added a final taunt: “We balance our budgets.”<sup>126</sup> The all-Canadian Seaway proposal symbolized an era of new possibility for Canada, buttressed by the postwar emergence of a robust sense of national self-confidence. Entangled with resolute faith in the ability of science and technology to improve the lives of Canadians, the all-Canadian Seaway represented that nebulous notion of progress, so pervasive throughout the developed world.

Canadian popular opinion and nationalism coalesced around the all-Canadian idea to the extent that all sides of the Canadian political spectrum lambasted the specter of American participation. The leader of the Labour-Progressive Party wrote: “The people of Canada are profoundly shocked to learn that the Government, without consulting Parliament, has entered into an under-the-table deal with the United States to scuttle the long-promised all-Canadian Seaway in return for short-term power concessions... Is our historical Canadian river – the mighty St. Lawrence, to become a Yankee Canal? Are we to abandon the course of Canadian nationhood chartered by the Fathers of Confederation? Is our country to be sold into bondage?”<sup>127</sup> Hyperbole aside, these remarks encapsulate the pervasive and longstanding belief that the St. Lawrence was a “Canadian river” and its internationalization threatened Canadian sovereignty and undercut national ambition. On the other end of the political spectrum, the more conservative *Globe and Mail* lamented that Canada had “bartered its chances for an all-Canadian seaway in return for a broad guarantee from the U.S. government to push approval of the power phase of the St.

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<sup>126</sup> Saunders’ remarks, given before the American Association of Port Authorities, are reported in: *Toronto Globe and Mail*, September 24, 1953, SLU, Seaway Collection, Collection, No.40, Mabee Series, Box 54, Folder 6, “Additional Clippings: 1953.” Lend lease was an American program to supply materials for the Allied War effort; Canada instituted a separate but similar program called “Mutual Aid”.

<sup>127</sup> Written by Tim Buck (leader of the Labour-Progressive Party) as an editorial in the *Ottawa Citizen* on February 23, 1954, it was republished in: Tim Buck, *An Open Letter to the Members of Parliament* (Regina, SK: Saskatchewan Committee, L.L.P., 1953).

Lawrence project.”<sup>128</sup> In contrast to the widespread Canadian indifference identified by the IJC in 1922, the Seaway idea symbolically embodied Canadian nationalism, and many Canadians viewed American participation as retrograde step in advancing Canadian interests.

Perceptively anticipating Canadian sentiment toward persistent congressional ambivalence and inaction, Julius Barnes commented: “I can well believe that Canada would prefer to own the Seaway rather than have to consult a *stubborn and reluctant partner* for every detail of operation.”<sup>129</sup> Following the passage of Wiley-Dondero, Canada reluctantly considered the terms of American participation.

Why the Wiley and Dondero bills succeeded where so many preceding legislative initiatives failed is a matter of some speculation. William Willoughby came up with seven reasons for the bills’ passage: Eisenhower’s military background and his administration’s vigorous and unqualified support; the leadership of certain individual members of Congress; the lobbying activities of the Great Lakes-St. Lawrence Association, enabled by ample steel industry funds; logrolling tactics that swung Senate votes; Quebec-Labrador iron-ore and associated industry support; the project’s lower price tag; and finally, the specter of the all-Canadian route.<sup>130</sup> Expanding this list, we might include: PANSY’s indication that private utilities would distribute publically generated power; the absence of joint control over Lake Michigan diversions; self-liquidating tolls that lowered the project’s projected long-term costs; favorable public

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<sup>128</sup> Clark Davey, “All-Canadian Seaway Bartered for Power,” *Toronto Globe and Mail*, February 19, 1954, LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-D-40, pt.26.1, Vol.6348, “St. Lawrence General Correspondence (February 1, 1954 – March 11, 1954).

<sup>129</sup> Barnes to Danielian, June 28, 1952, NEMHC, *Julius H. Barnes Papers*, Collection No.S3025, Box 9, Folder 2, “St. Lawrence Seaway File – Danielian, N.R., 1948-1957” (Emphasis added).

<sup>130</sup> Willoughby, *The St. Lawrence Waterway*, 259-260.

opinion toward the project; and the recasting the pro-Seaway arguments to emphasize that participation safeguarded the United States' national interest in the face of an all-Canadian alternative.<sup>131</sup> It is important to recognize that the Seaway idea did not succeed with the support of agricultural and sectional interests, but when proponents and circumstance – resource depletion and war – secured the endorsement of big business and the military-industrial complex.

The passage of the Wiley-Dondero Act placed the St. Laurent government in a difficult position. On one hand, it politically benefitted from pursuing the all-Canadian alternative because public opinion definitively favored it. On the other, rejecting American participation could have far-ranging repercussions on the maintenance of a constructive bilateral relationship. The domestic “liberal consensus” that buttressed postwar Canada’s active internationalist foreign policy and sense of national maturity, required an expanding economy and access to an American market that absorbed more than half of Canada’s exports.

In anticipation of the Wiley-Dondero Act’s passage, the Canadian Interdepartmental Committee on the St. Lawrence Project met in May 1954 to consider the future of the all-Canadian Seaway. An interesting feature of this meeting is the presence of General Andrew McNaughton, the chair of the IJC’s Canadian section and a member of the Permanent Joint Board on Defense.<sup>132</sup> Despite the potential conflict of

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<sup>131</sup> A poll in 1947 by *Modern Industry Magazine* found that 63.7% of “business opinion” favored the Seaway, see: United States, Congress, Senate, *Congressional Record*, 80 Congress, 2 Session (January 28, 1948), 672. A 1953 Gallup poll reported that 54% of American voters knew what the Seaway project was, and an overwhelming majority of these voters favored it from “Great Lakes-St. Lawrence Association – Press Release, April 16, 1954,” cited in: Mabee, *The Seaway Story*, 288 (Fn40).

<sup>132</sup> A recent study about McNaughton focuses on his activities during the Second World War, and an older three-volume biography details some of the substantial influence he exerted on postwar foreign policy. John N. Rickard, *The Politics of Command: Lieutenant-General A.G.L. McNaughton and the Canadian*

interest, McNaughton provided a strong voice for the construction of an all-Canadian Seaway – yet another example where the boundaries between expertise and advocacy were blurred. At the Interdepartmental Committee meeting, McNaughton claimed there existed no “formula for joint construction of the Seaway which Canada could accept without prejudicing our national life.” A professional engineer for the Department of Transport, R.A.C. Henry, concurred with McNaughton’s assessment and pointed out a last-minute \$100 million U.S. buy-in ostensibly gave them an equal voice in a \$700 million system from the head of the lakes to the Atlantic.<sup>133</sup> The “\$100 million dollar buy-in” referred to the Wiley-Dondero Act’s provision that limited the sale of bonds to fund the St. Lawrence Seaway Development Corporation to \$105 million.<sup>134</sup> Henry argued that the disproportionate Canadian costs meant Canada should safeguard its investment through sole ownership and control.

The meeting’s participants raised little objection to these points, but agreed that the international repercussions of suggesting competing seaways in the International Section merited further consideration. The Canadian ambassador to the United States, Arnold Heeney, disagreed with the McNaughton-Henry argument and pressed for the inclusion of the United States to protect the larger bilateral relationship. In a note to Lester Pearson, Heeney argued:

I appreciate that such a decision will cause keen regret in many quarters in Canada. Ever since Champlain labeled it on one of his maps “La grande riviere du Canada,” the St. Lawrence has been, and has been considered, an essentially Canadian river; and if recent events had turned out

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*Army* (Toronto: University of Toronto Press, 2010); and John Swettenham, *McNaughton*, Vols.1-3 (Toronto: Ryerson Press, 1969).

<sup>133</sup> “Meeting of the Interdepartmental Committee on the St. Lawrence Project (May 3, 1954), May 27, 1954,” LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-D-40, pt.29, vol.6348, “St. Lawrence Project: General Correspondence (May 17, 1954 - June 10, 1954).”

<sup>134</sup> For this limit enshrined by H.J. Resolution 104, see: United States, Congress, House of Representatives, *Congressional Record*, 83 Congress, 1 Session (January 9, 1953), 318.

differently, there would have been wide satisfaction in the construction of an all-Canadian seaway. No doubt there is also validity in many of the arguments advanced by Mr. Henry and General McNaughton... But I do think that our reputation in the United States would be gravely tarnished if we refused to enter into negotiations with the United States looking towards the completion of a seaway in which some of the canals would be on the United States side of the river and some on the Canadian side. Our reputation would also suffer, I think, if we did not make an honest effort, in the course of such negotiations, to work out co-operative arrangements with the Americans that would be both workable and fair.<sup>135</sup>

The Prime Minister and most of the cabinet shared Heeney's view and prioritized the maintenance of good relations with the United States over an all-Canadian waterway. When Eisenhower signed the Wiley-Dondero Act on May 13, 1954, the American embassy reported to the State Department that Canadian government officials seemed "unexcited and unenthusiastic," that most preferred the idea of a Canadian seaway "but they seemed prepared to accept a joint seaway if the United States offer was speedy." The exchange also acknowledged widespread sentiment in the Canadian press that "bewailed the probable passing of their 'all-Canadian dream.'"<sup>136</sup>

In June of 1954, the United States' Supreme Court cleared the final obstacle to American participation, when it ruled on a petition from a consortium of "Lake Ontario Land Owners" for a writ of *certiorari* (judicial review) concerning the PASNY license. The petitioners' attorneys alleged that damming the St. Lawrence would raise Lake Ontario's water level and since no provision had been made to compensate adjacent owners, the flooding would amount to an illegal taking of private property for public use. Department of Justice representatives countered that engineering studies never indicated

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<sup>135</sup> Canadian Ambassador (Heeney) to Secretary of State (Pearson), May 7, 1954, LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-D-40, pt.28, vol.6349, "St. Lawrence Project: General Correspondence (April 9, 1954 - May 14, 1954)."

<sup>136</sup> Dispatch No. 996, Ottawa Embassy to Department of State: Canadian Reaction to United States House Action of Joint St. Lawrence Seaway Bill, May 13, 1954, NARA II, *Department of State Central Files*, RG 59, Box 2802, 611.42321-SL/5-1354.

the possibility of flooded Lake Ontario shores, and even if the project flooded some lands, the benefits so outweighed the damage that they did constitute sufficient cause to invalidate the license. The Court accepted the Justice Department's argument and denied the petition, effectively removing the final obstacle to PASNY's participation.<sup>137</sup> As an aside, the argument that the project's benefits outweighed the damage caused by floodwaters would soon be deployed with devastating effect to Canadian communities adjacent to the International Rapids.

With the final legal obstacle removed, the State Department transmitted a formal diplomatic note proposing American participation in a joint St. Lawrence project. The note consisted of a short message, a copy of the Wiley-Dondero Act, and an announcement of the creation of the St. Lawrence Seaway Development Corporation. The note left the scope and terms of American participation unclear, and the Wiley-Dondero Act only specified unilateral construction of certain works on the American side.<sup>138</sup>

The Canadian Interdepartmental Committee met in June to discuss the Canadian response to this ambiguous American dispatch. McNaughton again expressed his preference for an all-Canadian Seaway, but most of the members believed Canada should entertain the notion of American participation. The most interesting development in these discussions is the circulation of an idea to engage in a negotiation strategy of "productive disagreement."<sup>139</sup> Basically, this strategy suggested that negotiators

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<sup>137</sup> Reported in: "U.S. Power Permit to State Upheld," *New York Times*, June 8, 1954, 1.

<sup>138</sup> This diplomatic note is dated June 7, 1954. See: "Exchange of Notes Between the United States and Canada, June 7 and 16, 1954," *St. Lawrence Seaway Manual: A Compilation of Documents on the Great Lakes Project and Correlated Power Development* (Washington: GPO, 1955), 168-170.

<sup>139</sup> The term seems to have been coined in: DEA Minute on St. Lawrence Seaway, July 20, 1954, LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), vol. 3175, "file: St. Lawrence Seaway 1952-54, Department of External Affairs Minute on the St. Lawrence Project."

deliberately provoke the breakdown of bilateral talks, so Canada could claim it had no alternative to the solo navigation project. The Committee considered but never implemented this strategy, and most members believed that it would be an act of bad faith to enter negotiations with the intention of disrupting them. On June 15, Pearson conveyed Canada's willingness negotiate on the basis of the American dispatch, if this signaled American officials' intention to provide a more specific proposal. The United States government consented and negotiations commenced on July 5, 1954.<sup>140</sup>

The talks centered on Canada's insistence that they reserved the right to construct duplicate canals on their side at a future date. They would accept American construction of a canal around Barnhart Island, but insisted on the immediate construction of an upriver lock in Canadian territory at Iroquois, ON. Canadian officials frankly admitted that the Iroquois project and prospect of a duplicate all-Canadian route had significant political motivation, and provided a means to mollify Canadian voters.<sup>141</sup> In a sense, the Iroquois lock represented a final grasp at a passing dream and the pretense that it could someday be revived.

The negotiators also discussed mutual guarantees of navigation rights and the nondiscriminatory treatment of vessels bound for either country's ports. Canada suggested the implementation of special treaty to enshrine these rights, citing concerns about the implementation of the McCarran Act. Passed in 1950, in response to the perceived threat of communism, the McCarran Act strengthened alien exclusion and

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<sup>140</sup> See: Dispatch No. 1107, Ottawa Embassy, St. Lawrence Seaway, June 15, 1954. NARA II, *Department of State Central Files*, RG 59, Box 2802, 611.42321-SL/6-1554; and Memorandum from Phleger to Merchant: St. Lawrence Seaway – New Arrangements with Canadian Government, June 22, 1954, NARA II, *Department of State Central Files*, RG 59, Box 2802, 611.42321-SL/6-1954.

<sup>141</sup> Dispatch 122, Ottawa Embassy, St. Lawrence Seaway Discussions, Ottawa (August 1954), August 19, 1954, NARA II, *Department of State Central Files*, RG 59, Box 2802, 611.42321-SL/8-1954.

deportation laws, combined with divergent national attitudes on security questions and the issue of third party shipping destined for Canadian ports, Canadian officials wanted non-discriminatory assurances. But American spokesmen doubted that the United States could enter into a treaty that would circumscribe the legislative authority of Congress without serious constitutional complications.<sup>142</sup> American representatives offered a promise of “prior consultation” to avoid discriminations and problems, which Canada reluctantly accepted.

On August 17, Canada and the United States exchanged an agreement in the form of diplomatic notes between Lester B. Pearson and Don C. Bliss, the American chargé at Ottawa. Pearson’s note delineated Canada’s immediate intention to construct a lock and canal at Iroquois and parallel facilities when required. However, before undertaking any further navigation works in that section, Canada promised to consult the United States. Moreover, Pearson acknowledged the United States’ agreement to construct a channel and locks below Iroquois in accordance the Wiley-Dondero Act, but Canada would be given prior consultation for any additional navigation works. Pearson further announced Canada’s right to continued operation of existing 14-foot canals, but that it would consult the United States if it planned on levying any tolls on that route. Both governments agreed that they would “use their best endeavours to avoid placing unreasonable restrictions” on the movement of passengers or freight through their respective canals. Finally, both agreed to prior consultation with respect to any new laws or regulations that might affect third party shipping to and from either country’s ports. Bliss’ response acknowledged the Canada’s prerogative to construct parallel facilities at a future date, agreed with the terms of prior consultation delineated in Pearson’s note, and reiterated the

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<sup>142</sup> Ibid.

terms of the United States' participation.<sup>143</sup>

With this exchange of notes, the United States and Canada substantially arrived at a Seaway agreement. Only the duplication at Iroquois remained unresolved, since the Wiley-Dondero Act specified the construction of a canal and lock at Point Rockaway, NY, across the St. Lawrence from Iroquois. A diplomatic note exchanged the following winter detailed a verbal *quid pro quo* stating that the United States would refrain from duplicating the Iroquois lock if Canada agreed to do the same at Barnhart.<sup>144</sup> This agreement effectively evaporated any pretense of a continuing Canadian aspiration to construct a parallel all-Canadian Seaway.

In response to the Seaway arrangement, the Canadian officials worried that the public would be thoroughly disaffected. An editorial in the *Globe and Mail* castigated the agreement, saying:

The agreement reached at last week's talks makes us not even junior partners of the Americans, but their humble servants, their grateful apprentices. Canada provides all the facilities which will make the American seaway effective. And in providing them, Canada takes upon herself the greater part of the total expenditure. We pay the piper; they call the tune.

Why has Canada backed down like this? Why did it not tell the Americans that the terms they offered were totally unacceptable?... We are informed that U.S. participation on the present basis will save Canada some \$100 million. Is that the price we have put on our national pride? ... [O]ur leaders have emulated Esau, and sold the nation's birthright for a mess of pottage.<sup>145</sup>

Biblical allusions aside, the public backlash did not have the severity anticipated by

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<sup>143</sup> These notes have been printed in: United States, Congress, Senate, *Compilation of Documents on the Great Lakes Seaway*, Senate Document 165, 83 Congress, 2 Session (November 15, 1954), 170-173.

<sup>144</sup> The parties exchanged this note on February 21, 1955. *Ibid.*, 173-174.

<sup>145</sup> *Globe and Mail* editorial, "A Mess of Pottage," August 16, 1954, LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), 1268-D-40, pt.34, vol.6349, "St. Lawrence Seaway Project: General Correspondence (August 16, 1954 - August 19, 1954)."

Canadian officials. The *Globe and Mail* article does not thoroughly represent Canadian public opinion, which typically appeared closer to disgruntled reconciliation. Over time, most Canadians accepted the fact that the Seaway would be jointly constructed and operated, and eagerly anticipated the project's completion and accompanying promise of prosperity.

Ultimately, Canadian policymakers' predominate concern was the maintenance of a stable and friendly relationship with the United States. They couched the abandonment of the all-Canadian Seaway in terms of "national interest," but it is clear that this nebulous idea implied the sustainment of good relations with their southern neighbor. A memorandum from the Canadian Department of External Affairs explicitly laid out this rationale:

The two countries are not in the habit of settling their common problems by unilateral separate action, but by consultation and agreement; and the St. Lawrence Seaway should not be an exception to this rule. Having sought United States participation in the Seaway for so many years, it would surely have been a serious affront to the Congress and people of the United States had Canada proceeded with construction of a so-called "all-Canadian" Seaway after the United States Congress passed, and the President signed, the Wiley Act. Such an affront would surely have caused long-run damage to our national interest; we are intimately bound not only by tradition but by so many day-to-day and practical circumstances, to the destinies of our powerful and friendly neighbor.<sup>146</sup>

The specter of the all-Canadian Seaway induced American participation, and the inextricable *nature* of the transboundary relationship meant Canada could not rebuff their inclusion. In 1961, Carleton Mabee argued that geography favored Canada by providing an option to "complete her own set of canals and locks from Lake Superior to sea with little expense," whereas the same geography prevented the United States from

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<sup>146</sup> Draft Memorandum on St. Lawrence Seaway, August 25, 1954, LAC, *Records of the Department of External Affairs*, RG 25 (R219-0-2-E), file 1268-D-40, pt.34.2, vol.6350, "St. Lawrence Project: General Correspondence (Aug. 16, 1954 - Aug. 19, 1954)."

accomplishing the same feat “without great expense.” He continued: “With what restraint Canada would use that whip was a question for the future.”<sup>147</sup> Mabee claimed that geographic orientation strengthened Canada’s position in the Seaway negotiations; however, this episode is also a reminder that the St. Lawrence is a transnational space and the Seaway could not be disentangled from transboundary politics. Geographic and hydrologic considerations provided the space for an all-Canadian Seaway, but the river is a shared resource and bilateral political considerations precluded unilateral development.

Mabee’s notion of “little expense” is also open to interpretation. In the end, the joint power and navigation project cost over \$1 billion, and the navigation portion alone cost \$470.3 million. Since Canada did not receive credit for the Welland Canal’s expense (\$132 million), Canada paid \$336.5 million and the United States \$133.8 million.<sup>148</sup> The planned Seaway navigation system included 15 locks, two under American control and the rest under Canadian, placed in five distinct canals. The two American locks (named the Eisenhower and the Snell) are located on the south side of Barnhart Island in the aptly named Wiley-Dondero Canal. The Canadian locks include: eight in the Welland Canal, the Iroquois Lock and Canal, two locks in the Beauharnois Canal, and finally the Côte Ste. Catherine and St. Lambert locks in the South Shore Canal. The plan called for locks at least 800 feet long, 80 feet wide, and 30 feet deep, designed to collectively raise or lower ships 569 feet. The navigation system maintains a minimum depth of 27 feet throughout, and the corresponding power works in the International Section, constructed

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<sup>147</sup> Mabee, *The Seaway Story*, 171.

<sup>148</sup> Figures taken from the St. Lawrence Seaway Management Corporation (formerly the Seaway Authority) and the St. Lawrence Seaway Development Corporation’s joint website. “Seaway History”, *The Great Lakes St. Lawrence Seaway System Website*, accessed August 16, 2013, <http://www.greatlakes-seaway.com/en/seaway/history/>. The figure of over \$1 billion for the total project, is taking into account the more than \$300 million spent by both PASNY and Ontario Hydro for the power portions of the project. These figures do not include the deepening of channels between the upper Lakes, undertaken mostly at American expense. These figures appear to be in USD.

by PAsNY and Ontario Hydro under the 1952 IJC Order of Approval, feature three dams – the Long Sault Spillway and Control Dam, the Iroquois Control Dam, and the Moses-Saunders Power Dam.<sup>149</sup>

Taken together, these technological artifacts comprised the makings of a new bi-national envirotechnical system. The agreement primed the Seaway’s transition from the abstract dreams of advocates and designs of planners to the concrete, physical structures and hidden channels that populate the river today. Already a thoroughly socially and technologically mediated environment, the Seaway represented a new scale of intervention into this hydrologic system. The dust jacket “pull-quote” on Chevrier’s autobiographical account – *The St. Lawrence Seaway* (1959) – proclaimed the project as “one of the most ambitious and effective man-made alterations to the face of the earth.”<sup>150</sup> The project entailed unprecedented hydrologic, geologic, and ecological transformation of the basin, but alterations did not unilaterally extend to the face of the earth. The project reciprocally transformed adjacent communities and societies, and reordered the region’s social, technological, hydrologic, and ecological arrangements.

The St. Lawrence Seaway Authority, St. Lawrence Development Corporation, PAsNY, Ontario Hydro, the Army Corps of Engineers, innumerable contractors, and thousands of workers imposed a “high-modernist” inspired megaproject that transcended

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<sup>149</sup> The necessity of the Iroquois Control Dam, which regulates the level of Lake Ontario and the amount of discharge down the St. Lawrence, was debated between Canada and the United States. However, the Canadian government saw it as politically expedient to assuage Quebec’s concerns about water levels in Montreal. See the following map: St. Lawrence Seaway Development Corporation and Army Corps of Engineers, *St. Lawrence Seaway, International Rapids Section, General Plan: Controlled Single Stage Project, 238-242* (Detroit: U.S. Lake Survey, 1955); and Canada, Parliament, House of Commons, *Correspondence and Documents Relating to the Great Lakes St. Lawrence Basin Development, 1938-1941*, 73.

<sup>150</sup> Taken from the back of the dust jacket on the 1959 “Macmillan” edition. Chevrier, *The St. Lawrence Seaway*, n.p.

national boundaries but, in another sense, reinforced them.<sup>151</sup> The St. Laurent government saw the Seaway as an exercise in nation building. Like the canals constructed during the era of Internal Improvements on the other side of the border, the Seaway would ostensibly augment the economic integration of Canada's various regions, and its east-west orientation comported with the ideas that underscored the geographically deterministic Laurentian thesis. However, the construction of a strong Canadian state required the security of a stable and friendly relationship with the United States, as well as access to a growing American market that consumed Canadian goods. The all-Canadian Seaway idea, which had clear symbolic advantages and political appeal, did not correspond with these larger concerns.

The management structure and emphasis on "prior consultation," not exactly joint operation, as enshrined by the 1954 Seaway agreement, reflects this tension. The Seaway's navigation works are operated nationally, but with a proviso that assured equal treatment across the border. This agreement simultaneously bridged the boundary and reified it. The Seaway project reinforced national identities and transcended them. The river is again revealed as a shared but contested space – two nations set out to collaboratively transform it, and in process they united and divided peoples from each other and the river.

At the commencement of construction, General McNaughton of the IJC remarked that the associated agencies set out to "control a great river more completely than had ever been done before in history."<sup>152</sup> McNaughton's statement, while hyperbolic, is discursively revealing. His emphasis on control discloses a perspective of human-

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<sup>151</sup> This alludes to James C. Scott's *Seeing Like a State*, which is thoroughly discussed in the following chapters.

<sup>152</sup> Quoted in: Mabee, *The Seaway Story*, 174.

hydrologic interaction that resonates with the perfectibility argument discussed earlier in this chapter. While the *Globe and Mail* deployed conservationist rhetoric and noted that the river's power "has been wasted for centuries ... because mere men didn't know how to humble the mighty St. Lawrence."<sup>153</sup> Now, with modern machinery, scientific expertise, and a massive bi-national workforce, Seaway agencies had the capacity to humble the river, *perfect* it for navigation, and eliminate wasted hydroelectric potential. However, these statements evince a specific vision of the river that emphasizes certain uses and knowledge while marginalizing others. We should ask – perfect it for whom and to what ends?

McNaughton's comment, like the quote on the dust jacket of Chevrier's book, implicitly posits a unidirectional relationship between the environment and people. Although the project exercised an unprecedented level of control over the river, the environment is not static and has never been wholly dominated by the technological artifacts or visions of humans. The river was not as pliable as the project's planners anticipated, weather conditions impeded work, and seasonality remains a perennial consideration in the Seaway's operation. Technology transformed the river, but the environment shaped the realm of technological possibility and its spatial arrangements. Geologic, climatic and hydrologic factors compelled and restrained the Seaway idea's institutional approval. The discovery of Quebec-Labrador ore and depletion of the Mesabi Range enlisted new powerful advocates to the Seaway cause, and fluvial geomorphology created spaces where hydropower could be profitably harnessed for the production of electricity. These considerations restructured the envirotechnical regime. On the other hand, Seaway opponents repeatedly raised the climatic obstacles to Seaway

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<sup>153</sup> "Pool on St. Lawrence is Formed by Blast," *Toronto Globe and Mail*, July 2, 1958, 2.

development, nicely encapsulated by Sillcox's term – the “Iceway.” Clearly, the environment did not simply play a passive role in Seaway discourse or construction, but actively shaped the arguments of proponents and opponents, the designs of planners, and the experience of workers.

The following chapters trace the Seaway's transition from an abstract idea to a physical, envirotechnical system. They will delineate the system's construction and arrangement, the experiences of workers and planners, as well as the project's recursive effects on adjacent communities and landscapes.

## Chapter Six

### *The Eighth Wonder of the World*

“The St. Lawrence Seaway Project was the *eighth wonder of the world*, a power-waterway development so great that it *defied comprehension*, except by the few who planned and built it.”<sup>1</sup>

Seaway construction was a herculean labor. The basic statistics of the project’s construction paint an abstract picture of its scale. Over four years, workers and machinery deployed in the International Section removed 210 million cubic yards of earth, poured 6.2 million cubic yards of concrete, dredged 69 miles of channels, constructed 45 miles of dikes to protect the towns of Cornwall and Massena, relocated 47 miles of highway, as well as 40 miles of double-tracked railroad, and 18 cemeteries. The power pool impounded by the project’s centerpiece – the Moses-Saunders Power Dam – created a 100 square mile lake that backed the river up 28 miles on the Canadian side. This lake flooded 22,000 acres in Ontario and another 18,000 acres in New York. In Ontario, eight villages and three hamlets had to be relocated, displacing 6,500 local residents. The flood also displaced 1,100 residents of New York, and downstream works near Montreal forced the relocation of another 1,500 people. Coordinated by nine government agencies, more than 22,000 workers participated in the construction effort, which cost over a billion dollars.<sup>2</sup>

Herbert Hoover called it the “biggest engineering job in the world”, and the Seaway Development Corporation’s deputy administrator M. Oettershagen labeled it “the

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<sup>1</sup> This phrase is taken from: John Brior, *Taming of the Sault: A History of the St. Lawrence Power Development – Heart of the Seaway* (Watertown, NY: Hungerford-Holbrook Company, 1962), 14 (emphasis added).

<sup>2</sup> These figures are available in a number of sources. For example, see the introduction of: Claire P. Parham, *The St. Lawrence Seaway Project: An Oral History of the Greatest Construction Show on Earth* (Syracuse, NY: Syracuse University Press, 2009), xxiii-xxxi. An Ontario Power Generation video exploring the project’s history also presents these figures: Ontario Power Generation, *From Dream to Reality [Du Rêve à la Réalité]: Ontario Hydro’s Story of the Construction of the St. Lawrence Seaway & Power Project*, directed by Ontario Hydro (Cornwall, ON: KAV Productions, n.d., probably 1960s), DVD.

greatest construction show on earth.”<sup>3</sup> The Seaway enterprise actually consisted of two interconnected projects – power development at the Long Sault, in the International Rapids Section, and the expansion of navigation facilities from Montreal to Lake Erie. The project’s most conspicuous artifacts are three concrete dams – the Moses-Saunders Power Dam, and the Iroquois and Long Sault Control Dams – and a series of 15 locks in five canals. The artifacts obscured by the river’s waters are less conspicuous – a 27-foot channel, the dams’ foundations, power pool, penstocks, as well as the turbine generators and tailraces located deep within the hydroelectric structures. These artifacts mask the networks of people, technologies, and practices deployed in their construction – workers, planners, institutions, machinery, etc. – as well as the institutional networks required for the Seaway’s operation. The Seaway confronts and incorporates a dynamic set of environmental conditions. It is neither wholly technological nor environmental, but an integrated envirotechnical system. This chapter explores the physical construction of that system, the institutions, people, and machines that built it, the networks that sustain it, as well as the discourses and ideology that underscore it.

As planners reconceptualized the river and workers transformed it, they created a something larger than the Seaway’s constituent parts – a megaproject worthy of James C. Scott’s concept of “high-modernism.”<sup>4</sup> To control the river and reshape it to specific social and economic ends, planners abstracted, rationalized, and simplified it; but they never fully dominated the river. High modernism, in this instance, connotes the

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<sup>3</sup> Hoover is quoted in: Mabee, *The Seaway Story*, 172; M. Oettershagen said this in: M. Oettershagen, Deputy Administrator, St. Lawrence Seaway Development Corporation, “St. Lawrence Seaway – Fact and Future, May 5, 1959,” 2, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 62, Folder 2, “Seaway Development Corp. – Articles.”

<sup>4</sup> For a description of “high-modern” ideology, see: Scott, *Seeing Like a State*, 4-5. Also see the description of Scott’s work in Ch.0.

deployment of technological expertise to reorder “nature” for specific human objectives. Planners attempted to make the river “legible” through simplifications that privileged certain uses and visions of the landscape while marginalizing others. Valuing bureaucratic and scientific expertise over local, tacit knowledge, the Seaway’s planners display the field of vision identified in Scott’s *Seeing Like a State*.

Graeme Wynn’s survey of Canada’s environmental history corroborates this high-modern megaproject characterization. He claimed that the confluence of economic and strategic needs, the “brute-force” technologies deployed in the river’s transformation, and a “high-modernist confidence in the human capacity to transform nature” espoused by both Canada and the United States, brought the nations together in “a project of unrivaled magnitude – the St. Lawrence Seaway.”<sup>5</sup>

Like other regions of the developed world, megaprojects populated Canada and the United States’ social and physical landscape, capturing transboundary popular and political imaginations in the postwar era. Scott characterized high-modernism as a transnational phenomenon that took root across continents, ideologies, cultures, and social arrangements. At its core, high modernism is about exercising state control through abstraction and rearrangement of the natural and built environments. Although often intended to improve the human condition, Scott contends that this limited

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<sup>5</sup> Graeme Wynn, *Canada and Arctic North America: An Environmental History* (Santa Barbara, CA: ABC-CLIO, 2006), 284. “Brute-Force Technologies” are also referenced in the subtitle of Paul Josephson’s *Industrialized Nature*. In Josephson’s first chapter – “Pyramids of Concrete” – he described the ideological basis of brute force technologies, and specifically focuses on dams as excellent examples of their implementation. Like Scott’s *Seeing Like A State*, Josephson argued that the brute force ideology crossed national boundaries and large-scale technological subjugation of nature was pursued under different political and economic configurations. However, all in cases, “brute force technologies... require brute force politics for full effect.” See: Paul Josephson, *Industrialized Nature: Brute Force Technology and the Transformation of the Natural World* (Washington, DC: Island Press, 2002), 15-68, 257.

perspective coupled with the application of state power has often led to socially disastrous conditions, and engendered varied forms of subaltern resistance.

Linking the systemization of rivers to social control precedes Scott's insightful analysis of legibility and state power. For example, Donald Worster's "hydraulic thesis" posits a direct relationship between the control of water and people. Worster's tome, *Rivers of Empire: Water, Aridity, and the Growth of the American West* describes the construction of "a social order based on the intensive, large-scale manipulation of water" in the Western United States, that has resulted in a "coercive, monolithic, and hierarchical system ruled by a power elite based on the ownership of capital and expertise."<sup>6</sup> I argue that this is not exclusively an American or western phenomenon, but its form and conspicuity varies with social and geographic context.

Tracing high-modernism in a postwar western Canadian context, Tina Loo argued that the construction of hydroelectric facilities is the "most prominent manifestation of the high-modern impulse." She further suggested that the resettlement of people and the reorganization of entire communities has been a key component of these high-modern endeavors.<sup>7</sup> Consonantly, the Seaway project's hydroelectric component compelled the resettlement of several communities and thousands of people.

Although the high-modern impulse transcended national boundaries, it is important not to draw false equivalencies between high-modern projects. As James Murton points out in his study of draining British Columbia's Sumas Lake, investigations

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<sup>6</sup> Worster's thesis is drawn from an older literature that posits a deterministic relationship between environmental conditions and social arrangements. Most notably, he drew on: Karl Wittfogel, *Oriental Despotism: A Comparative Study of Total Power* (New Haven, CT: Yale University Press, 1957). For the in-text quote, see: Donald Worster, *Rivers of Empire: Water, Aridity, and the Growth of the American West* (New York: Pantheon Books, 1985), 7.

<sup>7</sup> Tina Loo, "People in the Way: Modernity, Environment, and Society on the Arrow Lakes," *BC Studies*, 142/143 (Summer/Autumn 2004), 161-196. The in-text quote is on page 165, and the argument about resettlement is on 170-172.

of various state efforts to reorganize society and the environment need to incorporate the “historically specific discursive and ideological formations” that underlie each example.<sup>8</sup> Apart from the resettlement of several communities and displacement of peoples – the focus of the following chapter – it would be challenging to argue that the Seaway project exhibited the despotic characteristics of many of James C. Scott’s high-modern examples, or even the power-elite of Worster’s hydraulic thesis. The exercise of control and application of power to reorder this environment is subtler and, in that sense, more elusive.

The Seaway’s bi-national context also deserves consideration. Negotiating the project’s specifics, collaborating on its execution, and mutually operating the system required a bi-national network of actors, established practices, and shared values. Scott’s characterization of high-modernism as a transnational phenomenon is literally embodied by the Seaway project. The United States had a great deal of experience in constructing high-modern megaprojects designed to control the movement of water – the TVA, BPA, Colorado River system, etc. – and Canada shared their enthusiasm for the possibilities offered by the productive rationalization of river systems. The Seaway project drew heavily on a shared and pervasive, but nebulous notion of progress through technological intervention.

The project should also be placed in the context of the Cold War and competing ideologies. *Sputnik I*’s 1957 flight is often claimed as a technological turning point in Cold War, encouraging the United States and its allies into investing heavily in science

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<sup>8</sup> James Murton, “Creating Order: the Liberals, the Landowners, and the Draining of Sumas Lake, British Columbia,” *Environmental History*, Vol. 13, No.1 (January 2008), 96.

and engineering.<sup>9</sup> However, before Sputnik, the Seaway represented a technological intervention in the interest of continental and ideological defense, presumably against communist aggressors. Commenting on the Seaway proposal in 1951, Lionel Chevrier made an anti-communist, techno-enthusiast remark: “the survival of our civilization now depends above all on our scientific and technical superiority.”<sup>10</sup> Chevrier’s comment encapsulates the abiding faith that the application of technological and scientific expertise could improve the human condition; and the Cold War accentuated competing claims of scientific and technological superiority between capitalist, liberal democracies and communist nations. The Seaway served as a symbol of Cold War competition for modernity through technological audacity, a trope inextricably woven into the artifacts that comprise it.

When Langdon Winner provocatively asked: “do artifacts have politics?,” he invoked the example of Robert Moses’ Long Island parkways. Winner claimed that the roads’ low-hanging overpasses deliberately discouraged the movement of buses carrying the poor and African American communities to recreation spaces presumably reserved for upper and middleclass whites.<sup>11</sup> James C. Scott’s *Seeing Like a State* also invoked the example of Robert Moses, contrasting his high-modern vision of New York with Jane

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<sup>9</sup> Incidentally, it also coalesced a group of historians around a new academic discipline and professional organization, the Society for the History of Technology (SHOT). SHOT’s relationship to the *Sputnik* program is described in: Steven W. Usselman, “From Sputnik to SCOT: The Historiography of American Technology,” *OAH Magazine of History*, Vol.24, No.3 (July 2010), 9.

<sup>10</sup> “Stresses Canada’s Need of Scientists, Engineers,” *Toronto Globe and Mail*, January 29, 1951, 12.

<sup>11</sup> See the second chapter “Do Artifacts Have Politics?” in: Langdon Winner, *The Whale and the Reactor* (Chicago: Chicago University Press, 1988), 19-39. Winner’s ascription of specific social motives to Robert Moses has been widely debated. For example, Steve Woolgar and Geoff Cooper describe “Winner’s bridges” as an STS “urban legend.” They argue that his interpretation carries its own politics, and the historical veracity of story may be less important than its discursive function. They argue that Winner’s “textual politics” produce some of the practices and processes he wishes to criticize. For our purposes, we are reflexively using the urban legend of Moses and Winner’s bridges to make an admittedly political point. Steve Woolgar and Geoff Cooper, “Do Artefacts Have Ambivalence? Moses’ Bridges, Winners’ Bridges, and Other Urban Legends in S&TS,” *Social Studies of Science*, Vol.29, No.3 (June 1999), 443-444.

Jacob's vision of the city as a social organism.<sup>12</sup> Moses, the infamous "master builder," city planner, and administrator, became PASNY's chairman in 1954, a position he held until 1963. It is difficult to briefly summarize Moses' long career and personality.<sup>13</sup> Moses' rise to power in New York coincided with Al Smith's governorship in the early 1920s and lasted about four decades. A polarizing figure, Moses' legacy has been roundly debated. However, his intimate involvement in the Seaway project helps to unambiguously answer the question – does the Seaway have politics? The Seaway embodies the values and ideologies of its progenitors; it is a collection of artifacts that implicitly articulate a belief in the ability of people to reshape nature to specific political, social, and economic ends.

The pages that follow tell a story of how two nations collaboratively reshaped the St. Lawrence toward specific human ends and into a new, unique envirotechnical system. The narrative proceeds in a semi-linear fashion and thematically focuses on different aspects of the project. I begin by exploring the project's institutional infrastructure, interagency conflicts, and jurisdictional disputes. Tracing shifting plans and the reconceptualization of certain aspects of the project's execution follows this section. I proceed to describe the machinery deployed to remake the river, the workers of various skill-levels and backgrounds involved in this process, and other riverside "interlopers." Unexpected environmental challenges confronted by these people and their machines, especially during the excavation process, are also described below. Turning to materials,

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<sup>12</sup> Scott, *Seeing Like a State*, 88, 132-146, 386 (Fn.77).

<sup>13</sup> In fact, the standard, critical, and Pulitzer Prize winning biography of Moses is over 1,300 pages. Robert A. Caro, *The Power Broker: Robert Moses and the Fall of New York* (New York: Vintage, 1975). A set of reconsidered, more sympathetic views is presented in: Hilary Ballon and Kenneth T. Jackson, eds., *Robert Moses and the Modern City: The Transformation of New York* (New York: W.W. Norton & Company, 2008).

I look at the materials deployed in construction, the material issues faced by workers and planners, and the innumerable tests performed to ensure the Seaway's successful operation. Finally, I conclude with the project's completion, the opening of its channels to salt-bottomed navigation and its turbines to the river's flow.

The Seaway transformed the St. Lawrence but did not consume it. Like the Columbia River analyzed in Richard White's *Organic Machine*, the St. Lawrence is not lost but remade. An envirotechnical system that harbors more than a century of navigable dreams and supplies energy to modern societies' insatiable appetite for power, the Seaway's waters traverse the boundaries between two nations as well as those between technology and the environment.

#### *Institutional Infrastructure*

Work commenced almost immediately after Canada and the United States agreed to collaboratively construct the Seaway's navigation facilities in August 1954. The four agencies designated to lead the construction effort came from four different governments. The two federal agencies – the Seaway Authority (Canada) and the Seaway Development Corporation (United States) – oversaw the construction of navigation works in their respective country's territory. The two power agencies – Ontario Hydro and PASNY – oversaw the construction of works necessary for hydroelectric production at the Long Sault. However, a more complex array of organizations participated in the effort, including nine separate governmental agencies directly involved in the project's oversight.<sup>14</sup> The four principal institutions enlisted experts from other governmental

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<sup>14</sup> The nine agencies directly involved are – the St. Lawrence Seaway Authority, the St. Lawrence Development Corporation, the Hydro-Electric Power Commission of Ontario, the Power Authority of the State of New York, the United States Army Corps of Engineers, the International Joint Commission, the

institutions, hired and coordinated innumerable private contractors and workers, established normative on-the-job practices, collectively financed the project, and operated the established system. The monumental task of delineating jurisdictional boundaries and agency responsibilities led one commentator to label this initial stage of the project as “glorious confusion.”<sup>15</sup>

This complex array of institutional oversight and coordination is integral to the establishment of the Seaway as an envirotechnical system. While the environment conditioned the range of technological possibility, these institutions managed the deployment and construction of technological artifacts as well as the project’s human resources. They controlled the terms of intervention – conditioned by environmental and social constraints – enlisted experts to sanction and evaluate their plans, defined the project’s *modus operandi* and the normative behavior of its environmental and human constituents, and embodied the values and visions that underscored the project. The principal agencies valued speed and economy above all. Accordingly, they immediately moved the project’s expected completion time from seven to less than five years, and established a three-shift-a-day work schedule that continued through all seasons. The project’s institutional arrangements also reflect its transboundary character and technological complexity, and required oversight commensurate with the political, geographic, and technological scope of the undertaking.

At the bi-national level of coordination, the IJC reestablished the Joint Board of Engineers to oversee and coordinate the project’s design and execution among the responsible agencies. They also established two interrelated international boards to

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Joint Board of Engineers, the International St. Lawrence River Board of Control, and the International Lake Ontario Board of Engineers.

<sup>15</sup> Mabee, *The Seaway Story*, 173.

mitigate fluctuations in Lake Ontario's water level and regulate the outflow of water from Lake Ontario down the St. Lawrence – the St. Lawrence Board of Control (est. 1952) and the Lake Ontario Board of Engineers (est. 1953).<sup>16</sup> Because of the project's potential effect on lake levels and streamflow as well as the transboundary position of its artifacts, the project's coordination, regulation, and management fell under the jurisdiction of an established international regulatory regime.

The Seaway Authority Act, passed by Parliament in December 1951, created the St. Lawrence Seaway Authority; however, without a definitive Seaway construction plan it languished for three and a half years. The Authority began to take institutional form only after the passage of the corresponding Wiley-Dondero Act.

Within the government, Lionel Chevrier seemed like the natural choice to lead it. The most vocal and visible advocate for the Seaway idea, Chevrier also had a tactile connection with the St. Lawrence. He had grown up along its banks in Cornwall, swam as a child at Sheek Island, near the Long Sault Rapids, and his family owned a cottage on one of the islands in Lake St. Francis. Chevrier claimed to have first realized the St. Lawrence's *wasted* potential for deep-water navigation and hydroelectric production in the mid-1920s, when he was a young lawyer in Cornwall. Only then, he claimed, did the “drama and scope of the St. Lawrence River” begin to grip his imagination.<sup>17</sup> Chevrier's direct, political involvement with the Seaway idea began with his appointment as Minister of Transport in 1945. From this post he passionately pressed the Seaway idea in

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<sup>16</sup> The IJC established these two subsidiary boards pursuant to the June 25, 1952 Order of Approval, see: International Lake Ontario Joint Board of Engineers, *Water Levels of Lake Ontario* (Ottawa and Washington, DC: The IJC, 1958), 1-6. Available for download at: *International Joint Commission Website*, accessed April 3, 2014, <http://ijc.org/files/publications/K89.pdf>.

<sup>17</sup> Chevrier's biographical details are available in his autobiographical account of the project, see: Lionel Chevrier, *The St. Lawrence Seaway*, 3-4.

the House of Commons, the Cabinet, the Interdepartmental Committee on the St. Lawrence Project, bilateral negotiations with the United States, the press, and at public events. Chevrier also introduced the Seaway Authority Act in Parliament, inextricably associating himself with the project. So when the Prime Minister offered him the Seaway Authority's presidency in June 1954, it did not come as a surprise. In Chevrier's autobiographical account of the project, he claimed that he accepted the job with a degree of hesitancy. He had been a MP since 1935, the Minister of Transport since 1945, and was not anxious to quit his political career for a bureaucratic position, which he feared would submerge him in a "political backwater." However, the lure of participating in "one of the most exciting construction projects in the history of the world" compelled him to accept. Chevrier assumed the Authority's presidency on July 1, 1954.<sup>18</sup>

Chevrier began his tenure by searching for expertise among government agencies, and throughout the planning and construction process the Authority borrowed liberally from the Ministry of Transport's engineering staff, even absorbing an entire research branch of the Ministry.<sup>19</sup> Chevrier claimed that his selection criteria included both technical expertise and "personal charm and diplomacy," because he did not want the project bogged down by personality clashes and petty bickering.<sup>20</sup> Unfortunately, these

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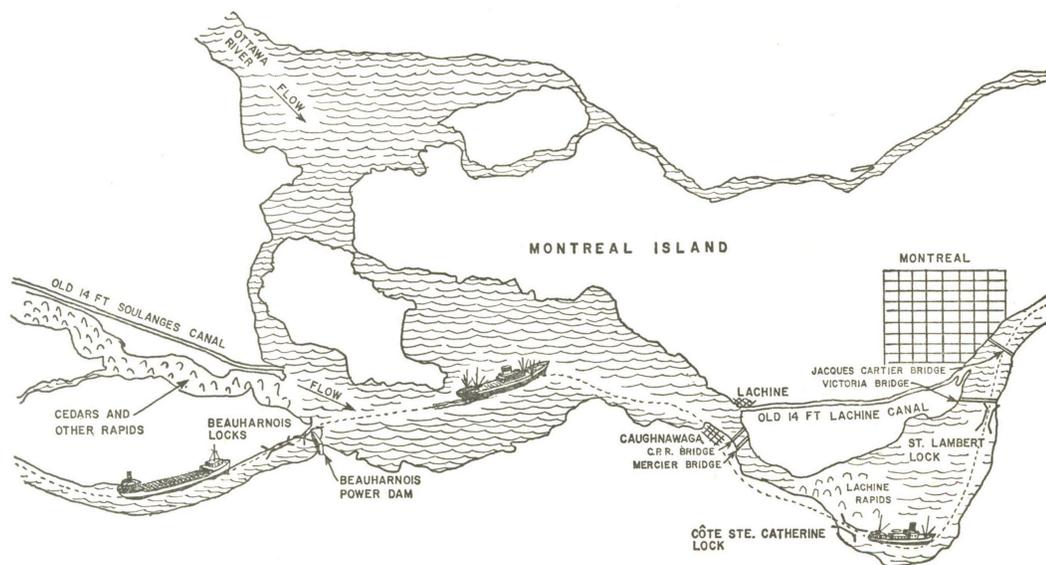
<sup>18</sup> Chevrier was appointed president of the Authority on July 1, 1954. See: *Ibid.*, 51-52.

<sup>19</sup> For example, Chevrier recruited a longtime associate, Charles Gavsie from the National Revenue Agency's Taxation Division to deal with the Authority's finances in the role of the Authority's vice-president. Chevrier also enlisted C.W. West, Chief Engineer of the Welland Canal, and Gordon Murphy, the manager of the Port of Montreal, by offering them executive positions in the Authority. *Ibid.*, 51-53.

<sup>20</sup> In 1954, the Seaway Authority absorbed the "special projects branch" of the Ministry of Transport, which was then surveying the St. Lawrence and focusing on the Lachine Section. R.A.C. Henry led this branch of the Ministry. A distinguished public servant, Henry had been a vocal proponent of the all-Canadian waterway – described in the last chapter – sat on the Interdepartmental Committee on St. Lawrence Project, had been deputy minister of Railways and Canals, and Chairman of the Air Transport Board. It should also be noted that since December 1953, both Chevrier and Henry sat on the IJC's St. Lawrence Joint Board of Engineers. See: *Ibid.*, 52-53.

criteria did not extend across institutional actors, and interagency conflict routinely surfaced.

The Seaway Authority built the Seaway's navigation works on the Canada side, which included building the South Shore Canal and its two locks, the construction of two locks in the Soulanges/Beauharnois Section, dredging in Lake St. Francis and the International Rapids Section, constructing the Iroquois Canal and Lock, and expanding the Welland Canal's existing facilities.



THE MONTREAL CONSTRUCTION AREA

Map of the Seaway Authority's Works in Quebec<sup>21</sup>

The Authority got to work quickly. By October 1954, it purchased land and began constructing a permanent office in Cornwall, in the “heart of the International Section” and, not coincidentally, Chevrier's hometown. Concurrently, they solicited contractor bids for work at Montreal and Iroquois. The Authority, given expropriation power by Parliament, immediately acquired the necessary land – about 238 acres – at Iroquois below the old Gallop Canal. Prioritizing work at Iroquois made a political

<sup>21</sup> Map reproduced from: Mabee, *The Seaway Story*, 185.

statement and kept the pretense of an all-Canadian Seaway alternative alive. The Wiley-Dondero Act provided for American construction in this section, but the Authority's quick mobilization forestalled American action. The following February, the two national governments reached an agreement to avoid American duplication of the Authority's lock and canal.

Unlike the other three principal construction agencies, the majority of the Authority's work occurred outside the International Section of the St. Lawrence. It constructed Seaway facilities downstream to Montreal, and deepened – by underwater blasting and dredging – the Welland Canal from its 1932 controlling depth of 25 feet to the Seaway depth of 27 feet. Apart from the relatively modest expansion of the Welland, the Authority focused most of its activity in a place associated with perennial Seaway resistance – Quebec.

Before the Authority received any tenders for Seaway construction at the Lachine Rapids, Chevrier approached Quebec's Premier, Maurice Duplessis, to offer the Province a participatory role in Seaway construction. Chevrier suggested that Quebec build corresponding power works to the Authority's navigation facilities, in the interest of economy and conservation. The Lachine had the potential to produce 1.2 million horsepower and the concurrent construction of power and navigation facilities would save the Province at least \$25 million over future development because the Authority would bear some of the cost of joint construction. Resolutely hostile to federal intervention in the waters or affairs of Quebec, Duplessis declined and claimed that Montreal had no immediate need for the power.<sup>22</sup> Initially, Chevrier could not abide the waste of the river's hydroelectric potential and sought to reason with the premier. When

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<sup>22</sup> This initial exchange was reported in: Chevrier, *The St. Lawrence Seaway*, 38.

that failed, he sought to exert public pressure on him, telling a Montreal audience that time was “growing short” for Quebec to participate.<sup>23</sup> These inducements had no effect on Duplessis’ intransigency. When private firms tendered the first contracts for work in this section, in October 1954, Chevrier, anxious to proceed with navigation works, waited no longer. The American consul general at Montreal reported to Washington that the Authority decided to proceed without Quebec’s participation.<sup>24</sup> Duplessis continued to frustrate the efforts of the Authority and his government followed a policy of observation without assistance, only commenting about the project’s perceived negative impact on water levels at Montreal. Quebec offered a kind of local, experiential knowledge about the St. Lawrence’s flooding proclivity at its confluence with the Ottawa River. The Authority built a massive scale model of the Lachine to demonstrate that the high spring waters could be diverted through the navigation channel (at a rate of 40,000 cfs), but the Quebec authorities remained skeptical that this would mitigate the problem. Provincial engineers withdrew their objections when they tested the model for themselves. The epistemic power of river simulation cut across political and linguistic borders.

By early 1955, the Authority made substantial headway in the construction of the Lachine Section. Chevrier claimed the Lachine “was by far the most complicated part of the job” because of the rapids’ length and densely populated surroundings. The first decision the Authority made was to bypass the rapids along the River’s south shore. South shore works avoided the north shore’s congestion, the busy harbor, and a phenomenon known as “St. Mary’s current” – an increase in the water’s velocity where

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<sup>23</sup> Chevrier’s speech and the details of Quebec’s unlikely participation is summarized in: Dispatch 1062, June 2, 1954, NARA II, *Department of State Central Files*, RG 59, 611.42321-SL/6-254.

<sup>24</sup> Dispatch 79, October 14, 1954, NARA II, *Department of State Central Files*, RG 59, 611.42321-SL/10-1454.

the majority of the St. Lawrence's flow passes between Île Ronde and Montreal.<sup>25</sup> The alteration of four bridges that connected Montreal to the south shore to accommodate the height of Seaway traffic presented the most dramatic and vexing problem. The first bridge on the downstream side of Montreal is the aptly named Jacques Cartier. Stretching across the St. Lawrence through Île Ronde at a height of about 60 feet from the water, the Cartier Bridge would have to be raised an additional 50 feet to accommodate Seaway traffic. Further complicating the task, the bridge needed to be refashioned without interrupting its traffic flow. In a fortunate coincidence, the bridge's designer, Dr. Phillip Louis Pratley of Montreal, already held a consulting position with the Seaway Authority; and Pratley solved the Cartier Bridge's altitude problem. His design employed an innovative jacking system to slowly raise the bridge, while workers constructed an adjacent higher span. Once the bridge was sufficiently raised, giant cranes positioned the new span above the old one and the jacking continued until it slid into place. The Bridge's southern extension now soared about 120 feet above the water, enough clearance for the largest Seaway vessels. Throughout the process, automobile traffic flowed unimpeded. When the old span could not cover the distance of the raised bridge, workers installed temporary "Bailey Bridges," a type of prefabricated truss bridge that carried traffic until the new span was in place.<sup>26</sup>

About 10,000 feet upriver, the low-lying Victoria Bridge carries both rail and automobile traffic. Like the Cartier, it was heavily trafficked and required a solution without interruption. Unlike the Cartier, the Victoria could not be lifted. The gradient

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<sup>25</sup> For a description of this phenomenon, see: Nora Corley, "The St. Lawrence Ship Channel, 1805-1865," *Cahiers de Géographie du Québec*, Vol.11, No.23 (1967), 278-279, 293.

<sup>26</sup> For a more detailed description of the jacking method and installation of the new span, see: Chevrier, *The St. Lawrence Seaway*, 87-89.

required to permit Seaway traffic would be too steep for the 100 trains that crossed the bridge daily. The obvious solution was to install a lift-span that would lower and raise a portion of the bridge, permitting ships to pass underneath. However, the crucial problem with the Victoria was not technological but intermodal. When Chevrier went to discuss the Bridge's modification with Donald Gordon, the president of Canadian National Railways, he received a stern rebuff. After this chilly reception, Chevrier pointed out that navigation rights took priority over rail traffic, to which Gordon angrily replied: "I'll be damned if anybody is going to tell me that a canal has got priority over a railway!"<sup>27</sup>

This story reiterates the longstanding dispute between railroads and waterways. Believing in the inviolable rights of railroads, Gordon could not concede that the Seaway had prior rights or greater importance, especially since the CNR would likely compete with the Seaway for freight. The two parties worked out a simple, but expensive solution. The plan reconfigured the Bridge into a "Y" shape, with two lift-spans and a Seaway lock in between. In operation, the first lift-span is raised and ships enter the lock, the lift-span is lowered and the lock fills or drains until it matches the height of the water on the other side – a total lift of 21.5 feet, then the second lift span is raised and the ship continues along the Seaway route. Trains and automobiles are simply rerouted to the other span if one lift-span is in use, providing for the continuous flow of rail and automobile traffic.

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<sup>27</sup> Quoted in: *Ibid.*, 68.



Victoria Bridge, Montreal, c.1963<sup>28</sup>

The final two bridges posed fewer technical difficulties. The Honoré Mercer joins Ville St. Pierre with the south shore, and the Authority decided to simply build a new 120-foot high section of the bridge above the proposed canal site. Once again, to avoid traffic interruption, the contractor built massive earthen ramps that connected the existing bridge to the shore beyond the canal site. This provided an alternative route while they constructed the new section. Finally, the remaining bridge was a relatively low-trafficked rail bridge owned by the Canadian Pacific Railway. The Seaway Authority retrofitted this bridge with two vertical lift-spans to permit the passage of Seaway traffic.

Between the Victoria and Mercer bridges, at the foot of the Lachine Rapids, the Authority built the Côte Ste. Catherine Lock to raise ships 36.5 feet to the height of Lake St. Louis. In addition to these navigation facilities, all along the South Shore Canal's 20-

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<sup>28</sup> Note the “Y” shape, inverted in this image, and the Seaway channel in the foreground. This photo of the Victoria Bridge is taken from: Northway Photomap Inc., Toronto: Archives of Ontario (AO), *Northway-Gestalt Corporation Fonds*, C30, ES-18-949, “Quebec – Montreal – Ste Helen’s Island (Old Fort).”

mile route from Lake St. Louis to below Montreal, the Authority constructed the La Prairie dike to protect the south shore from potential flooding.

Upstream, three additional bridges barred ships' passage. The two rail bridges at the Soulanges/Beauharnois, which, like the CPR Bridge, carried only limited traffic, making retrofitted lift-spans a simple and practical solution. The Roosevelt Bridge at Cornwall presented further complications and precipitated an interagency dispute, discussed below. At the Beauharnois, the Authority built two locks that together raise ships 80 feet, to the height of Big Beau's power pool. Federal authorization of Beauharnois power works, built by R.O. Swezey and the Beauharnois Light, Heat & Power Company between 1929 and 1932, compelled the company to simultaneously construct a navigation channel 16 miles long, 600 feet wide, and 25 feet deep, in anticipation of future Seaway construction. One auspicious incident at the Beauharnois was the Duplessis government's offer of \$300,000 for the construction of a four-lane traffic tunnel under the section's western lock. The Premier initially told Chevrier: "Your canal, you must understand, is right in the path of my highway... We began the highway first... You cannot expect us to relocate our highway." But instead of an anticipated argument or litigation threats, the Premier confessed: "I appreciate that it would be difficult to relocate your canal... [that] would cost a lot," and he offered the tunnel compromise.<sup>29</sup>

The Seaway Authority built the locks to connect the existing Beauharnois channel with the river below, and in a rare moment of cooperation built the traffic tunnel with the Quebec government's assistance. In addition to the canals and locks, bridge modifications, and the La Prairie dike, the Authority dredged a 27-foot channel for the

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<sup>29</sup> Chevrier, *The St. Lawrence Seaway*, 73-74.

entire route between Lake St. Francis and Montreal. In sum, the Seaway Authority's role in the construction of works in the St. Lawrence's International Section constitutes a very small part of its mandate and efforts, whereas the other three construction agencies' worked almost exclusively in this section. This helps explain the large expenditure disparity between the Authority and its American correlate, the St. Lawrence Seaway Development Corporation: The Authority had a budget of \$335 million and the Development Corporation a budget of \$140 million.<sup>30</sup> Despite this disparity, both these organizations collaboratively maintain and operate the Seaway's navigation facilities, and constitute an important part of the Seaway's continuing institutional infrastructure.

The Wiley-Dondero Act's passage, in May 1954, established the St. Lawrence Seaway Development Corporation as the agency responsible for the construction of navigation works on the St. Lawrence's American side. The Seaway Authority's insistence on building a lock and canal around Iroquois Point circumscribed their construction role to a canal and two locks around Barnhart Island – later named the Wiley-Dondero Canal and the Eisenhower and Snell locks – to bypass the Moses-Saunders Power Dam, as well as dredging the International Section to a minimum depth of 27 feet. To lead the Corporation, President Eisenhower appointed Lewis Castle, a former commercial banker from Duluth, vice-president and chairman of the Great Lakes-St. Lawrence Association's executive committee, and Julius Barnes' protégé.<sup>31</sup> Like the

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<sup>30</sup> These figures are in the countries' own currencies. However, between 1950 and 1962, the Canadian and American dollar traded close to parity. In fact, during Seaway construction, the Canadian dollar traded between \$1.00 and \$1.06 USD. For information on the exchange rate, see: Michael Bordo, Ali Dib, and Lawrence Schembri, "Canada's Pioneering Experience with a Floating Exchange in the 1950s," Bank of Canada Working Paper, 2007-45 (August 2007), *Econstor Website*, accessed April 18, 2014, <http://www.econstor.eu/bitstream/10419/53967/1/548042357.pdf>. For the in-text budget figures, see: Mabee, *The Seaway Story*, 192-193.

<sup>31</sup> Retrospective details of his appointment in: "Lewis Castle, U.S. Seaway Official, Dies," *Ottawa Citizen*, June 6, 1960, 5.

agency he led, Lewis Castle had no experience in waterway construction. By his own admission, he lacked the perceived prerequisite qualifications and expertise needed for the job, saying: “I am a heck of a Seaway administrator... I’m not even an engineer.” He explained that he felt like a country boy, out of place in government service, and unaccustomed to the weight his decisions carried as well as the amount of consultation they required.<sup>32</sup> By all accounts, Castle was a quiet and modest man, a longtime advocate for the Seaway, but unprepared for the burden of oversight and the bureaucratic wrangling that ensued.

The American Seaway advocacy movement thoroughly integrated itself in the institutional infrastructure that oversaw its construction and operation. Castle assumed the position of administrator, and prominent advocates such as John C. Buekema, the president of the long defunct Seaway Council and Secretary of the Muskegon Chamber of Commerce; Harry Brockel, executive director of the Great Lakes Harbors Association and Milwaukee’s Port Director; and Edward J. Noble, who organized the “Seaway for Defense Committee” in 1941, received appointments to the “Seaway Advisory Committee,” established by the President to advise the Development Corporation. The preceding narrative included descriptions of moments when the lines between advocacy and expertise became blurry, even illusory – the Development Corporation thoroughly institutionalized the Seaway advocacy movement, effacing those lines. However, enthusiastically supporting an idea is not equivalent to physically implementing it, and the Development Corporation, particularly Castle, struggled with the responsibility.

N.R. Danielian, the Great Lakes-St. Lawrence Association’s former executive vice president, stayed outside government service, and assumed leadership of the

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<sup>32</sup> Quoted in: “Seaway Director Hailed as Worker,” *New York Times*, August 8, 1954, 45.

Association. From this position, he alienated many of his old allies now in government service. He tried to influence the Development Corporation's management of the project, insisted on being apprised of all decisions, loudly voiced his opinion in interagency disputes, cast aspersions on project managers, and generally became an unabated irritant to the Development Corporation.<sup>33</sup>

All four constructing agencies employed private contractors to build their respective works, which left the Army Corps of Engineers in an ambiguous Seaway position. The Corps had been involved with the Seaway idea since at least 1900, when Lieutenant Colonel Charles W. Raymond submitted a report on various navigation routes from the Great Lakes to Tidewater and rejected the St. Lawrence route in favor of more defensible all-American alternatives.<sup>34</sup> However, the Corps' subsequent Seaway involvement was less adversarial. At the project's commencement, the most recent data gathered on the Long Sault Rapids came from Corps' investigations authorized by President Roosevelt in 1940. Historically, the Corps held a commission on the IJC, Joint Board of Engineers, and Joint Boards of Control, and been responsible for the majority of the United States' federal inland waterway development. However, the Seaway Development Corporation's authorizing legislation did not specify subsidiary agents for their construction program. The Chief of Engineers, General Samuel D. Sturgis Jr., lobbied hard for the Corps to be designated as the Development Corporation's primary

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<sup>33</sup> For example, Danielian's confrontational style came to a head in an exchange with the Army Corps of Engineers. The Corps tried to keep Danielian at arms length, using other Seaway advocates as a buffer, but in one heated exchange the Chief of Engineers, Lieutenant General Samuel D. Sturgis Jr., directly told Danielian he was "a damn fool", further perpetuating the confrontational nature of their interaction. This confrontational relationship between Danielian, the Seaway Development Corporation, and Army Corps of Engineers is described in: William H. Becker, *From the Atlantic to the Great Lakes: A History of the U.S. Army Corps of Engineers and the St. Lawrence Seaway* (Washington, DC: GPO, 1984), 31-33.

<sup>34</sup> United States, Congress, House of Representatives, *Report of Board of Engineers on Deep Waterways Between the Great Lakes and the Atlantic Tidewaters*, House Document 149, 56 Congress, 2 Session, 2 Vols. (December 2, 1900).

constructing agent. Sturgis worried that self-financing public entities, like the Development Corporation, might be the “wave of the future” under the cost-conscious Eisenhower administration. If public corporations became the standard, Sturgis wanted to ensure a continued role for the Corps as the primary construction agent in waterway development projects.<sup>35</sup> To this end, Sturgis courted Castle and sought to influence Corporation appointments. To his dismay, Castle appointed Martin W. Oettershagen, a private engineer with substantial Great Lakes hydraulic engineering experience, to the position of deputy administrator, and appointed many of his Seaway advocacy allies to the Corporation’s board. In a private memorandum Sturgis confessed that he was “not too happy” about the board members’ inexperience.<sup>36</sup>

After much political and interagency jockeying, Castle informed the Secretary of the Army in September 1954, that the Development Corporation would designate the Corps as its primary design and construction agent. The Development Corporation gave the Corps wide latitude and broad authority in terms of the Seaway’s design and construction, but this interagency relationship remained uneasy. The Corps had difficulty accepting a subordinate role, and believed that the Development Corporation’s inexperience would make an already complex job even more complicated. On the other side, the Development Corporation officials saw the Corps’ role as circumscribed to design and construction, and believed the Corps did not fully appreciate the

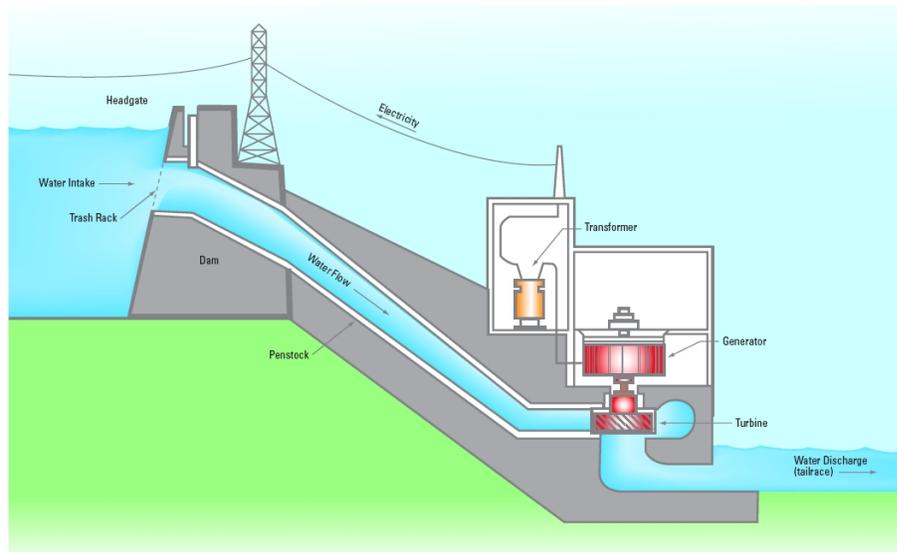
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<sup>35</sup> In an internal memorandum, Sturgis cautioned “we must fully and freely recognize that this is *not* an ordinary project...[and] under the present philosophy and trends, [the Seaway Development Corporation] may well be the forerunner of other Government corporations”, and he added, the Corps “must aim to build a record of confidence, trust and cooperation... that will recommend and stand us well in the future” [Sturgis’ emphasis], quoted in: Becker, *From the Atlantic to the Great Lakes*, 28-31, 35-36.

<sup>36</sup> *Ibid.*, 35.

Corporations' larger responsibilities – such as public relations and the negotiation of tolls to make the project self-liquidating.

In the International Section, the power agencies assumed the largest share of the job. Together, PASNY and Ontario Hydro built three permanent dams and several temporary cofferdams, created a new lake and power pool, and did the majority of the project's expropriation, moving whole communities out of the way. They collaboratively built the project's hydroelectric centerpiece – the Moses-Saunders Power Dam or “Big Mo” – which crosses the river between the north shore and Barnhart Island. “Big Mo” is over 3,200 feet long, and about 200 feet high, impounds a 100 square mile reservoir – Lake St. Lawrence, and has sixteen turbine-generator units on each half of the dam, which are collectively capable of producing 1.8 million kilowatts of electricity.



Generating Station Diagram © OPG<sup>37</sup>

<sup>37</sup> To produce power, water flows from the Lake St. Lawrence reservoir – also called the forebay – through intakes in the Dam's western façade. Here, the water flows down a penstock with a vertical drop of 81 feet – known as the hydraulic head – the pressure of the falling, rushing water turns a turbine, which in turn spins a generator. Inside the generator are large electromagnets, attached to a rotor, and encased within a coil of copper wires – called a stator – as the generator's rotor spins the magnets a flow of electrons is created in the copper wiring. This electricity is then stepped up in voltage by the station's transformers and distributed by high-voltage transmission lines. Once the water passes the turbine it is discharged from the dam through a tailrace and rejoins the river below. This image abstractly depicts this process, and is

Abstractly simple, in itself, the power structure is an excellent example of an envirotechnical system – the mobilization of hydrology and technology, institutions, people, practices to meet a specific human end. The Moses-Saunders generating station required extensive alteration of surrounding built and natural environments to produce the hydroelectric power associated with the Seaway system.

New York's utility company was involved, too. The IJC's 1952 Order of Approval, a 1953 license from the FPC, and the Supreme Court's dismissal of challenges to this license in June 1954, paved the way for PASNY's participation. As PASNY's chairman, the recalcitrant Robert Moses instigated or provoked a great deal of interagency dispute, but contractors credited him with keeping PASNY's involvement on track, ahead of schedule, and under budget. For example, several project managers recalled that Moses would "suffer no fools... rook no obstacles, and he charged full speed ahead." They aptly called him "the Bulldozer;" and one said: "I thought Robert Moses was nuts," but conceded, "it turned out he was right."<sup>38</sup> Robert Moses was aggressive, assertive, ruled the American portion of the power project with an iron fist, and used his almost dictatorial power to force contractors to complete the power project in a timely and cost-effective manner. However, Moses had another, aggrandizing side, and he changed the dam designs from simple utilitarian structures into national monuments that reflect the grandiose visions of the men for whom they are named.<sup>39</sup>

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available for download at: "Station Diagram," *Ontario Power Generation Website*, accessed August 19, 2013, <http://www.opg.com/power/images/hydrohow.jpg> (used with permission).

<sup>38</sup> In a series of interviews conducted by Claire Parham, several interviewees attributed PASNY's success to the leadership of Moses. For example see the transcripts of her interviews with Jack Bryant, Jim Cotter, Alfred Mellett, and Joe Marmo – all of whom worked for Uhl, Hall and Rich, PASNY's chief constructing agent (Mellett later became PASNY's official photographer). Parham, *The St. Lawrence Seaway Project*, 27-30.

<sup>39</sup> From an interview with Jack Bryant, who managed Uhl, Hall, and Rich's claims department. *Ibid.*, 27.

PASNY hired the Massachusetts based engineering firm of Uhl, Hall, and Rich (an affiliate of Charles T. Main) as their primary construction agent. PASNY's decision to use a private firm contributed to the Corps' consternation about securing a Seaway role. PASNY also enlisted the New York Department of Public Works as its expropriating agent, because this Department had extensive experience in that domain. In fact, the New York Department of Public Works did all the expropriating on the American side for navigation and power, and PASNY later turned over the navigation parcels to the Development Corporation.

On the other side of the river, the corresponding Canadian power agency, Ontario Hydro, used mostly in-house engineering expertise and did most of the expropriation on the Canadian side.<sup>40</sup> Ontario Hydro was the only one of the four principal agencies with prior and extensive construction experience as well as a long history of institutional Seaway advocacy. The 1952 IJC Order of Approval and concurrent authorizing legislation in Parliament secured Ontario Hydro's participation in the Seaway scheme. Like his predecessors, Hydro's chairman, Robert H. Saunders supported the Seaway idea, but first and foremost desired to augment Ontario's hydroelectric power capacity to meet the province's growing energy demands. Consequently, he hedged his bets and also pressed the power-priority scheme and the all-Canadian alternative. Retrospectively, industry insiders claimed: "More than any individual, he helped build consensus and agreement among various parties and competing interests involved that proved essential to making both the Seaway and the Power Project a reality."<sup>41</sup>

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<sup>40</sup> The Seaway Authority expropriated the land below the Gallop Canal at Iroquois and all necessary lands in Quebec. Ontario Hydro expropriated all the lands flooded by Lake St. Lawrence.

<sup>41</sup> Ontario Power Generation, *Robert H. Saunders St. Lawrence Generating Station: Commemorating 50 Years, 1958-2008* (Toronto: OPG Office Services, 2008), 15.

A fixture in Toronto politics, Saunders served as an alderman and city comptroller from 1935 to 1945, the City's mayor from 1945 to 1948, and finally as the chair of Ontario Hydro beginning in February 1948. Nicknamed "Grassroots Bob" for his plain speaking style and advocacy of programs that would improve the lives of Torontonians – notably championing the Toronto subway system, slum clearance, and traffic safety initiatives. Saunders was a well-liked, outspoken, and dynamic public servant. At the head of Ontario Hydro, he initiated a system-wide upgrade from 25-cycle electric current to the more commonly used 60-cycle current; this required new transmission equipment and the replacement of all non-compatible appliances that used the grid.<sup>42</sup> From the moment he assumed Hydro's chairmanship, he pressed hard for the development of St. Lawrence power, and had his engineers out surveying and testing the site long before American cooperation was assured. Robert Moses allegedly confessed that without Ontario Hydro's advance work, it would have taken at least a year longer to get the power job underway.<sup>43</sup>

Like the Army Corps of Engineers, Ontario Hydro provided much needed technological expertise and construction experience, as well as a long institutional history with the Seaway idea. In addition to in-house engineering expertise, it had extensive expropriation experience, and did most of the land acquisition on the Canadian side of the International Rapids. However, the controversies engendered by this task proved especially disconcerting for an agency used to a positive public image. In early 1955, Saunders died tragically from injuries he sustained in a plane crash at London, ON. Thousands attended his funeral in Toronto. During the service, Robert Moses praised

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<sup>42</sup> The cycle number refers to the frequency of oscillations in alternating current – measured in Hz – when transmitted from the power plant to the end user.

<sup>43</sup> See: Mabee, *The Seaway Story*, 173.

Saunders for his “political, professional and business experience [and] judgment.” Ontario’s Premier, Leslie Frost specifically cited Saunders’ Seaway role, and claimed that among his many achievements, “the most important and spectacular was his success in bringing together the governments and interests which made possible the St. Lawrence agreement. For 40 years it was talked of. Bob Saunders was the one who sparked the various elements together. But for him, the great project would not now be on its way... There was only one Bob Saunders.”<sup>44</sup> Saunders’ centrality to the Seaway idea and agreement may have been slightly overstated for the occasion, but Ontario Hydro’s role in the project was immense, and Saunders’ contribution to the utility’s efforts is memorialized in the power dam’s name.

There were four primary Seaway agencies, each responsible for a share of the job. Together, they provided the institutional infrastructure to construct, oversee, and maintain the Seaway system. The institutions represented the interests of four governments, two nations, and, ostensibly, millions of consumers and constituents. The job they embarked on was diverse and required enormous sums of capital and resources – monetary, political, human, technological, natural, and discursive. In retrospect, the ability of these agencies to coordinate the massive resources mobilized in the project is as impressive as the structures they built. However, this process did not always proceed with fluidity or harmoniously.

### *Interagency Conflict*

Coordinating the efforts of four disparate institutions and their respective contractors was itself a monumental task, and the project was often extolled as a model of cooperation across agencies and borders. For example, Lieutenant General Sturgis

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<sup>44</sup> Quoted in: Ontario Power Generation. *Robert H. Saunders St. Lawrence Generating Station*, 16.

claimed: “cooperation among so many agencies at so many different levels had never before reached a higher state.”<sup>45</sup> However, his remark glosses over the serious differences of opinion and conflicts that arose between the agencies and nations. The Iroquois lock and canal is just the first example in a series of unilateral actions that precipitated disagreement. The Seaway Authority’s insistence on building the Iroquois portion disconcerted the Development Corporation who saw its construction as their jurisdiction. Only the Authority’s speedy mobilization of legal action and construction resources, followed by the specter of redundant duplication, forestalled American work in this section.

To prevent similar conflicts in planning, execution and jurisdiction, the two navigation agencies, supervised by the International Joint Board of Engineers, set up regular meetings to coordinate their construction activities and schedules. At the first two meetings, the Development Corporation came with an agenda already prepared, and Authority representatives worried that the Americans would try to run the show. Chevrier wanted to quickly disabuse the Development Corporation of the notion that “they were invested with the responsibility of doing the whole job,” but also refused to tarnish the public appearance of cooperation, so he phoned Castle and quietly resolved the situation.<sup>46</sup> According to Chevrier, on occasion, the Canadian agencies felt obliged to remind their American counterparts that the project involved two nations and that their authority only extended halfway across the river. These early episodes aside, the two

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<sup>45</sup> Quoted in: Willoughby, *The St. Lawrence Waterway*, 266 (Fn8). For the substance of his entire remarks when he visited the Seaway on August 21, 1955, see: “Gen. Sturgis, Lewis Castle Visit Sites,” *Massena Observer*, August 22, 1955, 1. Similarly, Robert Moses called the project a “triumph of international partnership.” See: “St. Lawrence Project Called Triumph of International Partnership by Moses,” *Massena Observer*, June 25, 1959, 34.

<sup>46</sup> Chevrier, *The St. Lawrence Seaway*, 59.

administrators later considered themselves close friends and Seaway allies. However, not all interagency disputes could be settled with such ease and amicability.

Unsurprisingly, the abrasive Robert Moses appeared at the center of many of these disputes. Moses' frustration with the Joint Board of Engineers' repeated requests for updated data on PASNY's construction plans and schedules led the chairman to write a scathing letter accusing the Board of trying to micromanage both the power and navigation projects, and he caustically characterized Board members as "bureaucrats who operated with an astounding and high handed attitude."<sup>47</sup> This remark seems especially audacious coming from Moses, whose detractors could have easily described him in the same terms. Unhesitatingly outspoken about the disputes that surrounded the project, Moses told an Ottawa audience: "Builders get grey hairs not from the accidents and hazards of construction, but from the maddening opposition of those who seemingly have little interest in the direct route to the goal... There are times when disgust with these extraneous difficulties seems too much to bear."<sup>48</sup>

Moses' first interagency quarrel centered on uncertainty about the responsible agency for around three miles of dredging in the south channel below the power dam site. Estimated to cost nearly \$23 million, the two navigation agencies assumed the power agencies would do it since the work benefited both navigation and power.<sup>49</sup> However,

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<sup>47</sup> See a letter from Moses to the Senate Committee on Appropriations detailing his complaints, reproduced in: United States, Congress, Senate, Committee on Appropriations, *Third Supplemental Appropriation Bill, 1954, Hearings on H.R. 8481*, 83 Congress, 2 Session (April 8-9, 1954), 334-236. The in-text quote is reproduced in: Willoughby, *The St. Lawrence Waterway*, 266 (Fn9).

<sup>48</sup> "Mighty Drama of Seaway as Told by Robert Moses: Excerpts from the Remarks of Robert Moses at the Canadian Club, Chateau Laurier, Ottawa, Canada, June 13, 1956 on the International St. Lawrence." *Massena Observer*, June 25, 1959, 59.

<sup>49</sup> The dredging would establish Seaway depth and simultaneously created a higher head for the water falling through the dam's penstocks. However, the agencies disputed how the benefits to power could be usefully calculated, see: *Documents on Canadian External Relations*, Chapter 1, Part 3(c), "Economic

the IJC's Order of Approval did not specify the parties responsible for the work, and Moses, quite reasonably, believed the Order already required the power authorities to do a disproportionate amount of the overall job. Accordingly, Moses announced that PASNY would not do any more than absolutely essential for power purposes. He further charged that Castle sought to download the dredging cost on the power agencies because he was worried about cost overruns and a legislatively imposed debt ceiling. Moses refused to "bail" the Development Corporation out of its financial responsibilities, leading one editorial to cleverly note: "You can lead Bob Moses to water and you can't make him drink."<sup>50</sup>

The Army Corps of Engineers also did not escape Moses' critical gaze. He accused them of mismanagement, blamed them for erroneous cost estimates, predicted that cost disputes would delay the project for two years, and threatened to take the matter to the courts. This institutional infighting persisted through most of 1956, before Canadian and American diplomatic officials resolved it by allocating \$6 million to each of the power authorities and splitting the balance between the two national Seaway agencies.<sup>51</sup>

Although the settlement offered some relief, additional costs forced Castle to ask Congress for an increase in the Development Corporation's debt ceiling from \$105 to \$140 million. To justify the increase, Castle cited inadequate cost estimates provided by

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Issues: St. Lawrence Seaway," Vol.23 No.176 (April 27, 1956), accessed August 29, 2013, <http://www.international.gc.ca/history-histoire/documents-documents.aspx>.

<sup>50</sup> "Moses Expected to Stand Firm in Dredging Dispute With Seaway Corporation," *Massena Observer*, June 7, 1956, 18.

<sup>51</sup> This story is related through diplomatic exchanges found in: *Documents on Canadian External Relations*, Chapter 1, Part 3(c), "Economic Issues: St. Lawrence Seaway," Vol.23 Nos.173-182 (February 21, 1956 – May 31, 1956), No.188 (October 2, 1956), accessed August 29, 2013, <http://www.international.gc.ca/history-histoire/documents-documents.aspx>. Also see: Becker, *From the Atlantic to the Great Lakes*, 97-98.

the Army Corps, design changes, an accelerated work schedule, and inflationary price trends.<sup>52</sup> In the Congressional hearings that followed, a number of Congressmen seemed astonished by the new estimates.<sup>53</sup> Castle tacitly blamed the Corps and unforeseeable economic trends. One congressman accused Seaway advocates of fixing the figures to make the project look more desirable; and old Seaway allies began a round of recriminations for the anticipated cost overruns.<sup>54</sup> However, with the project already underway and after lengthy deliberation about the project's ability to self-liquidate at the new price, Congress expanded the Seaway Development Corporation's budget to \$140 million.<sup>55</sup>

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<sup>52</sup> The Wiley-Dondero Act authorized the sale of government guaranteed bonds up to \$105 million to cover the cost of American navigation improvements. Initially, the Corps estimated the navigation costs at \$88 million, but when the Seaway Authority insisted on building the Iroquois lock, it dropped to \$67 million. By 1956, the Development Corporation's total estimated expenditures appeared perilously close to the \$105 million authorized by Wiley-Dondero. See: St. Lawrence Seaway Development Corporation, *Annual Report, 1958*, 45-46, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 80, "Seaway Development Corporation."

<sup>53</sup> For example, Paul Douglas (D-IL) claimed: "Miscalculation... seems to be endemic with the army engineers," J. Harry McGregor (R-OH) stated, "Whoever left these items out should be fired." Castle tacitly blamed the Corps and economic trends, saying: "We inherited figures that were not realistic and we have been faced with inflationary times." For these hearings and quotes, see: United States, Congress, House of Representatives, Committee on Appropriations, Subcommittee on Department of Commerce and Related Agencies Appropriations, *Hearings: Department of Commerce and Related Agencies Appropriations for 1958*, 85 Congress, 1 Session (March 11-15, 18-22, 25, 1957), 874.

<sup>54</sup> Hubert Scudder (R-CA) accused Seaway advocates, specifically N.L. Danielian, of fixing the figures in advance of the Wiley-Dondero Act. Danielian responded by denying prior knowledge of Army Corps' mistakes, and accused Castle of mismanagement and "giving in to people right and left." Information on these hearings and all the quotes given by Congressmen can also be found in: Loren Pope, "Seaway Administrator Sees Big Growth for Massena Area," *Massena Observer*, April 18, 1957, 23; "Seaway Corp.'s Borrowing Power Increase Okay," *Massena Observer*, June 27, 1957, 1. And in untitled clippings from: *Watertown Daily Times*, April 9, 1957, April 14, 1957, and August 14, 1957, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 33, Folders 1-2, "Clippings-United States and Canada: St. Lawrence Seaway May-July, 1957, July-September 1957." Finally, It should be noted that Brockel, a member of the Seaway Advisory Committee, defended Castle against Danielian's charges, see: "Danielian's Pessimism Assailed by Port Director," *Massena Observer*, April 29, 1957, 16. Also see the following clippings with unclear publication information: "Seaway Squabble Flairs", Milwaukee, April 27, 1957, and "Charge Seaway Bungling May Cause Canada to Quit," Washington, April 27, [1957], NEMHC, *Lewis G. Castle Papers*, Collection No. S2425, Box 1, Folder 2, "Unidentified Newspaper Clippings."

<sup>55</sup> "Seaway Corp.'s Borrowing Power Increase Okay," *Massena Observer*, June 27, 1957, 1.

The Canadian Seaway Authority's cost estimates also increased, and Chevrier asked Parliament for a debt ceiling increase from \$300 to \$330 million.<sup>56</sup> A portion of the Seaway Authority's cost increase came from another dispute that revived interagency conflict, and national disagreement. In 1956, Chevrier revived the idea of a parallel all-Canadian seaway. Under the bilateral plan the north channel above Cornwall Island would only be dredged to the extent that it would help regulate the flow of water in the south channel. However, Chevrier requested his American counterparts' indulgence to dredge the north channel to Seaway depth in preparation for a Canadian seaway when conditions necessitated it. Not coincidentally, this dredging also deepened the channel up to Chevrier's hometown, and allowed Cornwall to construct a deep-water port.

Chevrier's request demonstrates the principal of "prior consultation" enshrined by the 1954 Seaway agreements, and the continued political value of fanning the lingering nationalistic dream of an all-Canadian alternative. The State Department opposed Chevrier's petition, claiming that Seaway facilities did not require duplication and Canada had no right to dredge in these boundary waters under the current agreement.<sup>57</sup>

However, the Authority simply proceeded without American consent. The United States recognized the "*de facto* situation which results from the Canadian decision to dredge a twenty seven foot channel north of Cornwall Island," but claimed that this decision did

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<sup>56</sup> Like his American counterpart, Chevrier explained that the cost increases came from design changes, inadequate soils information, the unexpected dredging below Big Mo, and he confessed that their engineering estimates had been "sloppy." Members of Parliament protested the "outrageous miscalculations," but approved the increase. Despite the reasons cited by the navigation agencies for their cost overruns, both power agencies stayed within their respective budgets. The "sloppy" confession is quoted in: *Cornwall Daily Standard-Freeholder*, February 20, 1959; and the "outrageous miscalculation" quote comes from Richard Bell (MP – Carleton), in: *Montreal Star*, February 20, 1959, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 47, Folder 1, "Canada: St. Lawrence Seaway, Effects, January – May, 1959."

<sup>57</sup> This story is also related through diplomatic exchanges found in: *Documents on Canadian External Relations*, Chapter 1, Part 3(c), "Economic Issues: St. Lawrence Seaway," Vol.23 Nos.173-182 (February 21, 1956 – May 31, 1956), No.184 (July 20, 1956), No.186-189 (July 31, 1956 - October 11, 1956), accessed August 29, 2013, <http://www.international.gc.ca/history-histoire/documents-documents.aspx>.

not accord with the Seaway agreement.<sup>58</sup> With these unilateral actions, the Authority added at least \$4.5 million to its Seaway cost, but their efforts carried a substantial political reward. The *Cornwall Standard-Freeholder* declared that Chevrier had “established Canada in the dominant position for all time with respect to the joint operation of the Seaway.”<sup>59</sup> This sentiment underscores the lingering Canadian nationalism and pride associated with the project. Although the possibility of unilateral Seaway development had passed, establishing Canada in a superior position to reap its benefits remained a viable and politically popular alternative.

Another illustration of interagency conflict comes from an episode involving the modification of bridges. Irony abounds in a story when bridges, which literally connect peoples and spaces together, became divisive issues. The bridge in question was the Roosevelt, a low-level rail and highway bridge connecting Cornwall to Massena via Cornwall Island, already mentioned above. Like the Montreal bridges, the Roosevelt did not provide enough headroom for Seaway ships to pass, so the four Seaway agencies and local officials decided on a plan that would remove the Roosevelt Bridge and construct three new bridges with lift-spans to accommodate rail and automobile traffic, across the Grass River, over the Snell Lock, and across a narrow section of the St. Lawrence called “Polly’s Gut.” By mid-1956, the Development Corporation had spent over \$300,000 designing and commencing construction on the new bridges, and PASNY spent a similar amount on a new highway that would pass through a state park that Moses, in his role as

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<sup>58</sup> “Memorandum from American Division to Under-Secretary of State for External Affairs.” *Ibid.*, No.192 (November 21, 1956).

<sup>59</sup> Quoted in an unnamed clipping from: *Cornwall Daily Standard-Freeholder*, April 27, 1957, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 36, Folder 2, “Canada: St. Lawrence Seaway, Effects, 1957.”

head of the State Parks Council, planned for the St. Lawrence's American shore.<sup>60</sup> At a ceremony to open contractor bids for the bridge relocation work, the Development Corporation announced a new plan drafted in conjunction with the Seaway Authority. This plan included persuading the New York Central Railroad to abandon its unprofitable service to Cornwall and Ottawa, and thus removing rails from bridge consideration. With rails taken out of the equation, a single high-level bridge could be build between Cornwall and Massena, on approximately the same site as the Roosevelt. Perennially concerned with the Corporation's finances, Castle believed this new plan would save approximately \$2 million by avoiding the extensive relocation of road and track work as well as the construction of additional bridges. Chevrier's Seaway Authority agreed, since it would likely save them over \$1 million as well.

Predictably, Moses vociferously protested the change. Moses' fame, or infamy rested on the construction of parkways in and around New York City from the 1920s onward. Part of his Seaway plans included attracting tourists to region through parkway construction, a well-established means of doing so by the 1950s. The new bridge plan would ostensibly route traffic away from his Seaway adjacent park. Moses further claimed that the redesign would add another year to Seaway completion. Castle insisted that the plan would not affect the Seaway's opening, sardonically adding: "Ships don't

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<sup>60</sup> For information on the proposed parks and bridge redesign, see: "Seaway Bridge Gets Tricky Face Lifting," *Chicago Daily News*, June 26, 1958, B5, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76A, "Clippings and Articles;" "Will Relocate Roosevelt Bridge Route," *Cornwall Daily Standard-Freeholder*, June 28, 1955, 9, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers;" "New Bridge to Span River's South Channel," *Cornwall Daily Standard-Freeholder*, June 29, 1957, 34, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers;" "2 River Parks Will Spark Gain in Area Economy," *Watertown Daily Times*, January 21, 1955, 17; and Power Authority of the State of New York, *St. Lawrence Reforestation, Parks, and Recreation*, December 1955, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 66, "Special and Annual Reports."

ride on bridges, they operate on water.”<sup>61</sup> The normally diplomatic Castle sent Moses a long written defense of the changed plan; to which Moses curtly replied: “Our relations are not improved by long-winded explanations from you.”<sup>62</sup> Moses’ objections focused primarily on the diversion of park traffic: The new plan would make the partially completed highway a “dead end park road,” not a well-travelled parkway.<sup>63</sup> The single bridge idea upset Moses’ ambition to have tourists travel through an extensive park system on the American side. Whereas the federal Seaway agencies had only an incidental interest in roads, and since the bridge modification plan was a navigation and not a power issue, Castle and Chevrier won the debate and adopted the single high-level bridge plan. Moses lost.

Some of the conflict occurred between contractors and their respective construction agencies. For example, pervasive labor shortages meant that the Development Corporation tasked the Corps with an increasing workload; and because the Corps could only pay federally mandated wage scales, companies felt undercut by the Corps’ employment practices. Many contractors also complained that they had received inaccurate information about the project’s environmental conditions, on which they predicated their bids, and sought to readjust their remuneration for a more difficult job.

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<sup>61</sup> “Power Authority of the State of New York, Press Release, July 19, 20, 1956,” and Robert Moses, Chairman Power Authority of the State of New York to Dr. Richard L. Hearn, Chairman, Ontario Hydro, July 20, 1956, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 63, Folder 2, “Correspondence.” The quote from Castle was reported in: *Watertown Daily Times*, July 23, 1956, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 24, Folder 1, “Clippings: St. Lawrence Seaway, Construction, July-September 1956.”

<sup>62</sup> “Robert Moses, Chairman, Power Authority of the State of New York to Lewis G. Castle, Administrator, St. Lawrence Seaway Development Corporation, July 27, 1956,” SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 63, Folder 2, “Correspondence.”

<sup>63</sup> “Power Authority of the State of New York, Press Release, July 19, 20, 1956,” and Robert Moses, Chairman Power Authority of the State of New York to Dr. Richard L. Hearn, Chairman, Ontario Hydro, July 20, 1956, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 63, Folder 2, “Correspondence.”

Disputes between labor and management also occasionally surfaced, and threatened to subvert work schedules.<sup>64</sup>

Finally, the most protracted dispute centered on the toll structure designed to make the project self-funded. In 1955, both federal Seaway agencies established committees to recommend appropriate toll schedules for the waterway. In the course of public hearings – commenced in September 1957 – it became evident that many Canadians opposed any tolls on the Seaway. Tolls on the St. Lawrence and Welland canals had been abolished in 1905, and Canadian officials particularly objected to tolls on the Welland Section, which had been completed long before the construction of an integrated Seaway system.<sup>65</sup> In the United States, the toll issue revived erstwhile Seaway opponents – Atlantic and Gulf coast port cities, the railroads, etc. – who argued that modest or absent tolls constituted an unfair competitive advantage and the *de facto* subsidization of the waterway. To this end, they formed the “National Committee for a Non-Subsidized Seaway,” and demanded adherence to Congress’s directive that required the project to be self-liquidating.<sup>66</sup> The Wiley-Dondero Act demanded that the Development Corporation pay off borrowed capital with interest for construction, along with the early operation and maintenance costs within fifty years, sums that required substantial toll levels. Traditional Seaway advocates – Midwestern representatives, Great Lakes harbors, etc. – argued that low-tolls encouraged use, and would increase the aggregate amount of revenue generated. N.R. Danielian and the GLSLA provided one of

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<sup>64</sup> For example, see: “River Projects Stalled as 1,200 Workers Strike,” *Watertown Daily-Times*, March 12, 1956, 22.

<sup>65</sup> For an example of Canadian opposition to the implementation of any tolls, see the following statements made in the House of Commons: Canada, Parliament, House of Commons, *Debates*, 24 Parliament, 1 Session, Vol.2, 1958 (June 16, 1958), 1159-63. For those in Parliament who desired to keep tolls low to encourage the movement of Lakes’ traffic, see: *Ibid.*, 1166-69.

<sup>66</sup> “Sections Clash on Seaway Tolls,” *New York Times*, December 22, 1957, 110.

the strongest voices on the low-tolls front. Danielian suggested an extended pay-off period, and that nearly a quarter of the Seaway's cost be written off for its beneficial "defense and recreation" contributions.<sup>67</sup> The defense argument has been well established, but recreation benefits introduce a relatively new consideration into the matrix of Seaway value. It reflects an expanded emphasis on the multipurpose development of waterways to justify federal expenditure, but recreation remained an ancillary consideration in the envirotechnical qualities of the system. The GLSLA and sympathetic legislators asserted that the tolls issue boiled down to a choice between high-tolls and insufficient traffic or low-tolls and the substantial movement of freight.

In June of 1958, the national tolls committees released their preliminary reports.<sup>68</sup> The report addressed Canadian concerns about overtaxing freight moving exclusively through the Welland, divided the revenue collected in the St. Lawrence Section 71 percent to the Canadian Seaway Authority and the remainder to the Development Corporation, to reflect their relative expenditures; and awarded all revenues collected on the Welland to the Seaway Authority. The Authority would collect the tolls for both agencies and a Joint Tolls Advisory Board would be established to report on complaints or allegations of discrimination. Moreover, at the end of five navigation seasons, the two

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<sup>67</sup> "Seaway Foes Tied to High Tolls Aim, *New York Times*, October 20, 1957, S16. A summary of the controversy and the recreation and defense quote was taken from: Willoughby, *The St. Lawrence Waterway*, 270-272.

<sup>68</sup> The report suggested a toll of \$0.06/gross registered ton of vessel (size of the ship), plus \$0.42/short ton of bulk cargo (natural commodities) or \$0.95/short ton for general cargo (such as machinery, automobiles, and other finish products). For ships only traversing the route from Montreal to Lake Ontario, the fare would be reduced to \$0.04/gross registered ton of vessel, \$0.40/short ton of bulk cargo, and \$0.90/short ton of general cargo. For a trip only through the Welland Canal the rates would be \$0.02/gross registered ton of vessel, \$0.02/ short ton of bulk cargo, and \$0.05/short ton of general cargo. Whereas, passenger ships would pay a charge of \$0.50/passenger for each lock, see: "Report of the United States Tolls Committee to the St. Lawrence Seaway Development Corporation, June 12, 1958. 25 pages, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 62, Folder 3, "United States Tolls Committee."

navigation agencies would report on the sufficiency of the authorized tolls to meet their statutory repayment requirements and adjust the toll schedule accordingly.

In August of 1958, the Seaway agencies held public hearings on the committees' toll proposal. Predictably, the railroads and port cities criticized the modesty of the tolls, but most participants thought the tolls adequate to liquidate the project's cost in fifty years, contingent on the anticipated volume of traffic.<sup>69</sup> The two governments, by an exchange of diplomatic notes on March 9, 1959, adopted the committees' recommendations, effectively laying another Seaway controversy to rest. However, as we will see, this toll structure ultimately failed to make the project self-liquidating.

Despite these pervasive conflicts – dredging in the south and north channels, bridge replacement, agency-contractor disagreement, and tolls – in public, Seaway officials maintained the pretense of absolute interagency harmony. However, sometimes the façade of bi-national and interagency harmony became publicly transparent. For example, in 1957, Lionel Chevrier resigned his position as the Seaway Authority's president to return to the House of Commons. When asked what he found to be the hardest part of the job, he replied that it had been dealing with the Americans – a politically astute answer from a Canadian politician.<sup>70</sup> If posed the same question, the Corps may have responded the Development Corporation; Lewis Castle may have said Robert Moses or congressional oversight; and Robert Moses gave his wide-ranging response at the outset of this section: “the maddening opposition of those who seemingly

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<sup>69</sup> “Conference Proceedings on The Method of Assessing and Collecting Tolls and Other Subjects, The United States Tolls Committee of the St. Lawrence Seaway Development Corporation, Washington, DC, September 9, 1957 and Chicago, Illinois, September 11, 1957, 175 pages,” SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 62, Folder 3, “United States Tolls Committee.”

<sup>70</sup> Mabee, *The Seaway Story*, 195.

have little interest in the direct route to the goal.”<sup>71</sup> The disparate institutional actors, their managers, and the governments they represented often had divergent priorities and pursued individual visions of their role in the project and of the river itself. On occasion, personalities or priorities clashed, fomenting interagency conflict. Design changes, accelerated schedules, and new data kept plans fluid and exacerbated tensions between construction agents.

### Shifting Plans

The Seaway project’s scale required a commensurate amount of technical and logistical planning. Under considerable pressure imposed by the accelerated work schedule, which demanded that the power portion be completed by June 1958 and the navigation route by June 1959, engineers produced over 10,000 technical drawings.<sup>72</sup> The construction agencies planned to build the three major dams “in the dry,” meaning that the riverbed would be exposed through cofferdam construction, the diversion of the river’s flow, and by pumping the water out of the impounded sections. Since the St. Lawrence has no significant period of “low-flow” – in fact, as the introduction noted, it has the most uniform flow of any major river system in the world – diverting substantial portions of its regular flow was a monumental task. Accordingly, the agencies built the Iroquois and Long Sault control dams in halves, impounding and draining half the river’s flow in consecutive intervals. Before the construction of the Iroquois Control Dam, a stone barrier – nicknamed the “Gut” – regulated the level of Lake Ontario. Canadians

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<sup>71</sup> “Mighty Drama of Seaway as Told by Robert Moses: Excerpts from the Remarks of Robert Moses at the Canadian Club, Chateau Laurier, Ottawa, Canada, June 13, 1956 on the International St. Lawrence,” *Massena Observer*, June 25, 1959, 59.

<sup>72</sup> The estimation of technical drawings is made in Mabee, *The Seaway Story*, 173. For example, the *Seaway Authority Fonds* include 3,830 technical drawings, see: LAC, *The St. Lawrence Seaway Authority Fonds, 1817-1996*, RG 52 (R1195-0-X-E), “Interim Series of Graphic Material from the St. Lawrence Seaway Authority, R1995-16-3-E.”

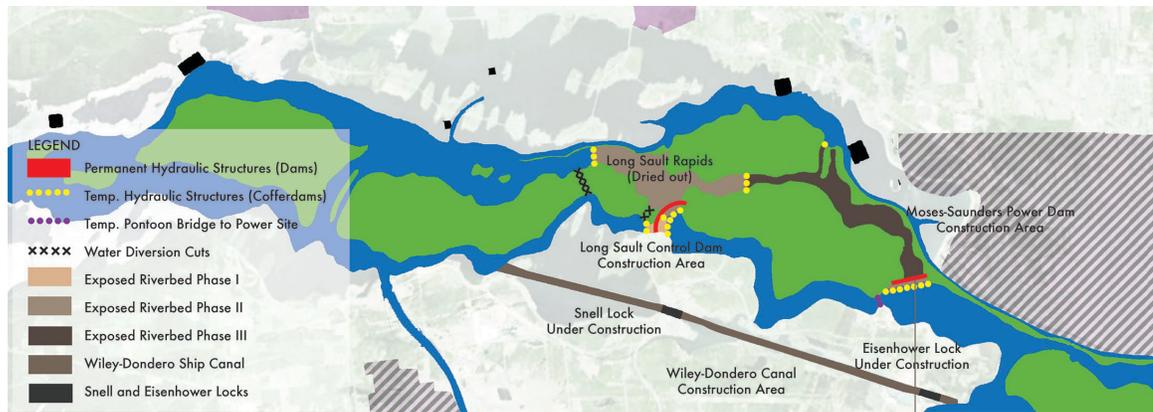
installed this barrier in 1906 near Prescott, ON, but after a series of complaints from Lake Ontario's waterfront property owners – who claimed that the Gut caused high-water erosion – the federal government removed it in 1953.<sup>73</sup> The Iroquois Dam essentially replaced the Gut, but incorporated giant gates that could be opened to amplify the Lake's discharge down the St. Lawrence. The transition from the “Gut” to the Iroquois Control Dam is illustrative of a changing technological and material regime – from a simple stone barrier to a concrete structure with steel gates and inbuilt flexibility.

The Long Sault Dam controls the flow of water directed into the power pool, helping to maintain a consistent average streamflow in Big Mo's forebay of 250,000 cfs. This flow-rate would be slow enough to allow sheet ice to form and prevent the creation of frazil ice – a concern since Alcoa's power proposal in the first decade of the 20<sup>th</sup> century – but steady enough to keep the turbines spinning year round.<sup>74</sup> Once these structures were substantially in place, the power agencies built Big-Mo by diverting the entire river's flow back into the south channel and raising this structure – 3,216 feet long and 195.5 feet high – in a dried out section of the Long Sault Rapids between the Canadian shore and Barnhart Island. The federal navigation agencies concurrently built the Eisenhower, Snell, and Iroquois locks so vessels could circumvent these structures.

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<sup>73</sup> Chevrier, *The St. Lawrence Seaway*, 111-112.

<sup>74</sup> Historical discharge (streamflow) data is available from the Detroit District Office of the Army Corps of Engineers. See: Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data. Hydraulic Discharge Measurements and Regimen Changes on the Great Lakes Connecting Channels and International Section of the St. Lawrence River, 1841-1993, Appendix C: Table Summaries of Discharge Measurements” (March 1994), *United States Army Corps of Engineers, Detroit District Website*, “Discharge Measurements,” accessed September 3, 2013, <http://www.lre.usace.army.mil/Missions/GreatLakesInformation/Outflows/DischargeMeasurements.aspx>.



International Rapids Section Construction Area Map<sup>75</sup>

Building these structures, associated cofferdams, diversion channels, etc. required precise coordination between the plans of disparate agencies. However, new reports and studies kept the plans dynamic long after the project commenced. The Authority wanted to keep the Canadian 14-foot canals in operation during the construction period to facilitate the continued movement of traffic and serve as a site of possible future expansion. However, they barred the transportation of materials, machinery, and men to the river, so Ontario Hydro built two tunnels under the old Cornwall Canal to facilitate this movement. A year and a half into the project, the Canadian government abandoned the continued operation of the 14-foot canals because of high-costs, Ontario Hydro's insistence that it would delay the project, and the United States' objection that their continued operation would undermine the tolls necessary to liquidate the Seaway project.<sup>76</sup>

Testing and studies ran concurrently with construction and new data often necessitated midstream modifications. Within the first year, the placement of the Long

<sup>75</sup> Created by author.

<sup>76</sup> *Documents on Canadian External Relations*, Chapter 4, Part 3(e), "Economic Issues: St. Lawrence Seaway," Vol.21, Nos.413-431 (January 5, 1955 – February 21, 1955), No.434 (July 7, 1955), and Chapter 1, Part 3(c), "Economic Issues: St. Lawrence Seaway," Vol.23, Nos.173-192 (February 21, 1956 – November 21, 1956), accessed August 29, 2013, <http://www.international.gc.ca/history-histoire/documents-documents.aspx>.

Sault Control Dam moved by 100 feet; the Iroquois Control Dam moved prospective location by nearly 3,000 feet and its form changed from a long curving structure to a straight one. The Corps diminished the width of the American locks from 90 to 80 feet after hydraulic testing on the Snell lock revealed that the enlarged size would create excessive turbulence in the locks.

A year and a half after the groundbreaking ceremonies, the federal Seaway agencies continued to redesign the Eisenhower, Snell, and two Beauharnois locks to accommodate unanticipated soil conditions. The Seaway Authority redesigned the South Shore Canal, to augment its flow and address concerns raised by Quebecois engineers that the canal would produce flooding and ice-jams at Montreal. On the American side, the Corps drilled 8,000 holes to secure a solid foundation for the dike protecting Massena, but continued to modify plans for the dike's location. A full two and a half years after groundbreaking, engineers continued to run miniature boats through scale models constructed in Toronto, Ottawa, and Vicksburg, Mississippi, to test channel designs. Finally, two years and eight months after the commencement of construction, Lewis Castle explained to a congressional committee that new tests continued to produce results "far removed from the original conceptions of what work had to be done."<sup>77</sup> The river played an active role in keeping planners' designs dynamic.

The scale of the job and fluidity of plans required careful coordination, sometimes impeded by the conflicts between institutions. However, the enormous amount of testing and modeling also reflects a particular scientific vision of the river. Consonant with James C. Scott's idea of high-modernism, they constructed an abstracted vision of the

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<sup>77</sup> United States, Congress, House, Committee on Appropriations, Subcommittee on Department of Commerce and Related Agencies Appropriations, *Hearings: Department of Commerce and Related Agencies Appropriations for 1958*, 85 Congress, 1 Session (March 11-15, 18-22, 25, 1957), 874.

river, one that captured elements of the river but did not fully encapsulate it.

Accordingly, the construction agencies built scale models to test certain variables in the project's operation. Ontario Hydro built a large-scale model of the project at its Islington facility in west Toronto, where they tested the alteration of various hydrologic variables, such as differential rates of streamflow. The Corps built channel models in its Vicksburg, Mississippi facility and used the University of Minnesota's hydraulic labs to test lock designs. The Seaway Authority appropriated the Canadian Department of Transport's Hydraulics and Special Project's facilities in Montreal, where they constructed a large-scale model of the Lachine Section to test channel and lock designs and simulate conditions that could cause flooding in the Montreal region. The Canadian National Research Council built a model of a Welland Canal lock in their Ottawa facility to experiment with the fastest way to drain and fill Seaway locks. The St. Paul Office of the Corps ran the similar lock efficiency tests for the American locks.<sup>78</sup>

Historian Martin Reuss explored the Army Corps' efforts to model rivers at the Waterways Experimentation Station in Vicksburg, Mississippi, beginning in the New Deal. He claimed that the models they constructed enabled the collection of massive quantities of useful data and helped the Corps anticipate certain problems, but also emphasized that empirical knowledge remained vital to the successful application of hydraulic engineering. Reuss claimed that modeling "illuminates the limitations of scientific analysis – and the necessity of engineering art – in the complex world of fluvial

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<sup>78</sup> For description of these models, see: Chevrier, *The St. Lawrence Seaway*, 111-112; Becker, *From the Atlantic to the Great Lakes*, 64-65; and "Lieutenant Colonel James E. Hammer, Corps of Engineers, U.S. Army, Addressing the Society of Military Engineers at Clarkson College of Technology, Potsdam, NY, March 30, 1955," SLU, Seaway Collection, Collection No.40, Mabee Series, Box 52, Folder 3, "Field Notes for the Seaway Story."

hydraulics.”<sup>79</sup> Modeling represents a sort of middle ground between theory and practice or science and art.

Similarly, the Seaway testing facilities and models furnished useful data, but only approximated the actual river. They offered an abstracted view that did not exactly correspond with the river’s complex reality. The models did not capture the project’s massive social and ecological implications, nor did they fully encapsulate the river’s geological and hydrological features. These shortcomings became most apparent during the excavation and damming processes described below. The pervasive social and ecological transformations are described in the following chapters.

The testing and modeling processes illuminate the construction of an envirotechnical system that transcends institutional and national boundaries. These efforts reveal a particular vision of the river that emphasizes certain uses and perspectives focused on the river’s *utility* while relegating or marginalizing others. The project administrators focused on the river as a navigable and productive space, considering its local and recreation uses as ancillary to the river’s primary function of carrying boats and producing power. Their tests limited the scope of variables and conditions to make the river *legible* to Seaway planners. Plans shifted with new data and dynamic conditions, but the end goals remained static. However, the foregoing discussion reveals that the planning process is characterized by transboundary collaboration and dissention, reminding us that the river and project exist in a shared but perennially contested space. All construction parties shared their data, borrowed one another’s facilities, and pooled outside expertise drawn from all over the world. While institutional disputes persisted,

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<sup>79</sup> Martin Reuss, “The Art of Scientific Precision: River Research in the United States Army Corps of Engineers to 1945,” *Technology and Culture*, Vol.40, No.2 (April 1999), 294.

governments also facilitated the movement of people and construction materials across the national boundary, allowing workers to cross without the normal immigration procedures and machinery and materials to enter duty free.<sup>80</sup>

The Seaway system is not simply an amalgamation of technological artifacts situated in a specific hydrologic context, but a complex and dynamic array of institutions, machinery, people, practices, and perspectives. However, this dynamism is often underappreciated, and is masked by the system's contemporary functionality. Carleton Mabee fittingly claimed: "Contrary to the assumption of a sometimes blasé public, the modern miracles of engineering are not often brought to pass without uncertainties, errors, and painful reassessment of plans."<sup>81</sup> This implicitly acknowledges that engineered solutions to human demands are hardly miraculous.

### *Inorganic Machines*

The Seaway project deployed a massive amount and scale of machinery to transform the organic world, but like the project they helped build, the delineation between the organic and inorganic is not easily parsed. The term inorganic is used here in reference to Richard White's notion of a river as an "organic machine," and in contrast to the human workers deployed in the project.

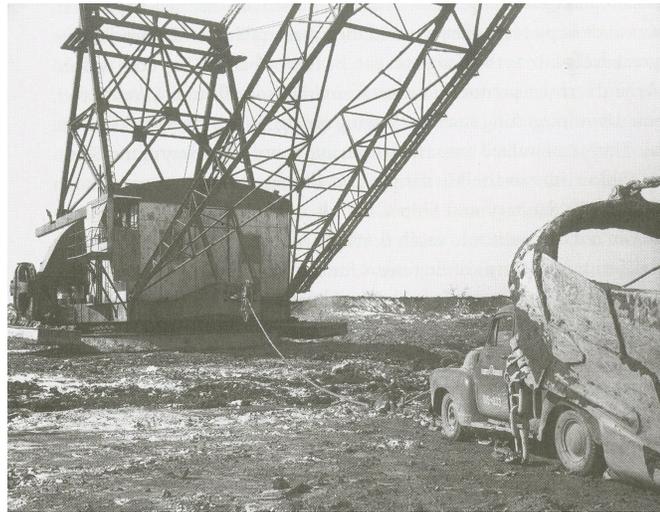
Machines came to the river in astonishing numbers and variety. The project enlisted machines to destroy and machines to create – rock crushers, rakes, and wagons; single bucket, chain bucket, and suction dredges; road and pan scrapers; electric and diesel shovels; different varieties of cranes; bulldozers; pile drivers; sheep's foot rollers; jet-flame drills that could burn through 30 feet of rock an hour; and hydrologic jacks

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<sup>80</sup> "Customs Rules Set on Seaway Project," *New York Times*, September 25, 1954, 33.

<sup>81</sup> Mabee, *The Seaway Story*, 176-177.

powerful enough to lift bridges. At one time, the project included an estimated \$80 million dollars worth of mechanical equipment in the International Section alone. This included nine dredges, 80 scrapers, 140 mechanical shovels and draglines, 400 tractors, and 730 trucks.<sup>82</sup> Machines travelled to the project from far and wide. To deepen the river's channels, the Corps brought in its own grab dredge – the *D.D. Gaillard* – and leased a suction dredge from the Panama Canal Company – the *Paraiso*. The grab dredger had a clamshell bucket lowered by boom into the water, where it grabbed a section of the riverbed and hoisted the earth back up to the ship for deposit into the ship's hold. The suction dredge deployed a rotating cutter-head that loosened the soils along the riverbed, and a suction inlet below the cutter that essentially vacuumed up the loosened material using centrifugal pumps.



The Gentleman at work in the International Section<sup>83</sup>

<sup>82</sup> The \$80 million dollar claim was made by Ellis Armstrong, the Deputy Project Manager for the U.S. portion of the Seaway, in: Ellis Armstrong, "River Diversion" speech at Massena, NY, May 14, 1957, 5, SLU, *Seaway Collection*, Mabee Series, Box 52, Folder 3, "Field Notes for the Seaway Story." Also see: Mabee, *The Seaway Story*, 179; "Men and Machines Carve Way to the Sea: Seaway Report in Photos," *The Milwaukee Journal*, August 4, 1957, 22 pages, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76A, "Clippings and Articles;" "St. Lawrence Seaway-Power Project and Tourist Guide, Report No.3: Men and Machines Join to Create Gigantic Seaway," *Cornwall Daily Standard-Freeholder*, June 29, 1957, 5, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Folder 76B, "Canadian Newspapers."

<sup>83</sup> This photo was found in: Ontario Power Generation, "The Gentleman", SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 3, "Field Notes for The Seaway Story."

In 1955, the Seaway Development Corporation awarded an excavation contract to the Badgett Strip Mining Company and their monstrous walking dragline – a 650-ton Bucyrus Erie 450-W with a 165-foot boom – nicknamed the “Gentleman.” Their contract included digging a long channel upstream of the American locks, and in areas around the dike protecting Massena. Before the Seaway project, the Gentleman worked to scoop coal out of open pit mines near Madisonville, Kentucky. After winning a Seaway contract, the Badgett Company began to move the Gentleman toward the St. Lawrence. It began its journey by walking 18 miles on its huge treads, toward the Mississippi, but it got stuck in the mud just outside of Madisonville and remained immobile for two weeks. After it was already due to begin work on the St. Lawrence, it arrived at Kentucky’s Green River to be loaded on a specifically constructed steel barge. Its boom had to be dismantled, and two tugs towed the barge along the Green and Ohio rivers, up the Mississippi and Illinois rivers, through the Chicago Drainage Canal, and into the Great Lakes-St. Lawrence System. It docked at Chicago, where the Corps of Engineers modified the dragline for Seaway specific tasks. Along its Seaway journey, the Gentleman passed through 21 locks, under 105 bridges – some which had to be dismantled to permit its passage – to arrive at the International Section.

When it arrived at Ogdensburg, over 1,000 people gathered to watch the spectacle of its perilous passage through the Galop, Iroquois, and Plat rapids. The Badgett Company hired two local tugs – the *Radel* from Cornwall and *Jennie* from Massena – and a local river pilot to guide the Gentleman through the violent waters. Many locals speculated that the dragline could not successfully shoot the rapids. In response to these concerns, the local river pilot attempted to engage a third tug, but the president of the

Badgett Company, Roger Badgett, refused and decided to pilot the barge himself. Badgett persuaded several local river men to join him on the journey and provide counsel on the best way to travel downstream – an example of local, tacit knowledge of the river’s intricacies being harnessed for the project. They filled the Gentleman’s bucket with stones to help balance the boat’s weight, borrowed life jackets from the Ogdensburg Police Department, and set off downriver with one tug in front and one behind. In the swift current around a sharp curve in the river at Sparrowhawk Point, the barge swung hard into the *Jennie*, splintering the tug’s side and breaking its fuel line, forcing the tug to disconnect. Towed only by the *Radel*, the Barge swung hard around the point and broke the second towline, setting it adrift in the treacherous rapids. Badgett tried to steer the barge using the Gentleman’s bucket as a makeshift rudder. It pitched passed Ogden’s Island, missed a freighter by mere feet, and crashed into a rock at the Island’s foot, where it stopped. It appeared that the local prophets of the Gentleman’s ruin had been proven correct, but Badgett remained persistent. He manipulated the Gentleman’s controls, using the bucket to shove the barge off the rock and back into open water. The following day, the Gentleman arrived at Long Sault Island a little worse for wear, but operable. It had left Kentucky 68 days earlier and travelled nearly 2,000 miles to begin excavating the Seaway.<sup>84</sup>

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<sup>84</sup> For the description of the Gentleman’s story, see: “‘Seaway Edition: Gentleman’ and ‘Junior’ at Work for Badgetts,” *Potsdam Courier-Freeman*, July 30, 1955, 22, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76, Folder 2, “Periodicals;” “Progress Report No.1: The Gentleman Hard at Work,” *Cornwall Daily Standard-Freeholder*, June 28, 1955, 26, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers;” “Progress Report No.2: Giant Gantry Cranes Play Vital Role,” *Cornwall Daily Standard-Freeholder*, June 28, 1955, 3, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers;” “Report No.3: The Gentleman Tops Them All,” *Cornwall Daily Standard-Freeholder*, June 29, 1957, 37, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers;” “Draglines Float to the Seaway,” *Excavating Engineer*, August 1955, 42-43, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 55, Folder 6, “1955;” “Progress Report No.9: Famed

A slightly smaller dragline, with the converse gendered nickname – the “Madam” – took a similar journey traveling up the Mississippi from Louisiana, down the Great Lakes-St. Lawrence system, and after being stranded on a reef near Waddington, NY for a month, joined the Gentleman at work in the International Section. Finally, a third monstrous dragline, aptly named the “Glutton,” traveled by rail from Wyoming. It took twenty-three freight cars to carry the disassembled machine to the worksite, where Native American steelworkers reassembled thousands of components to put it to work excavating the riverbed.<sup>85</sup>

The Gentleman’s story is illustrative of scale of machinery deployed in the project and the movement of technological artifacts toward the river. A battery of machines moved back and forth across the border, transforming the landscape and collectively building another kind of organic machine. These mechanical agents of transformation are components in a much larger envirotechnical system. The Seaway project employed an unprecedented amount of machinery at a single construction site, allowing workers to amplify the scale and rate of transformation. The machines provided transformative force, but were not autonomous agents. As shown in the Gentleman’s journey down the rapids, local riverine and navigational knowledge remained crucial to the movement and operation of project machinery. The machinery required human input, and like the machines they operated or deployed, people descended on the river in droves.

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Dragline Has Left North,” *Watertown Daily Times*, April 29, 1957, 11, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76, Folder 2, “Periodicals.” Also see: Mabee, *The Seaway Story*, 177-178.

<sup>85</sup> “Draglines Float to the Seaway”, *Excavating Engineer*, August 1955, 42-43, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 55, Folder 6, “1955.” There is some dispute between the accounts given by Ellis Armstrong, Mabee, and the newspapers cited above, as well as an account given by Daniel J. McConville, which is based on the reminiscences of one of the local tug’s pilots. Here, I have combined the various accounts and used the portions that are corroborated by different sources, also see: Daniel J. McConville, “Seaway to Nowhere,” *American Heritage’s Invention and Technology*, Vol.11, No.2 (Fall 1995), 34-44.

### Organic Interlopers

The project enlisted a massive workforce, deploying over 20,000 workers in the International Section alone. People came from near and far to participate in the undertaking. The Seaway siphoned much of the available skilled labor in eastern Canada and the Northeastern United States, but the project's appetite for labor and materials seemed insatiable, and shortages presented a perennial dilemma for project administrators. This workforce was transnational in character and both Canadians and Americans traversed the border to bid on jobs or expend their labor. Most workers dissipated with the employment opportunities, but some remained in local communities, changing their demographics and social fabric. The Seaway project also pulled other people to the river. Outside of office and clerical positions, female workers rarely worked directly on the project, but many participated in other ways, creating communities of workers' wives and an expanded service sector to meet the demands of the massive influx of people and capital. Locals tended to view the newcomers as interlopers in their tightly knit communities, sometimes treating them with an ambivalence that bordered on contempt, but simultaneously sought to profit from their presence.

Constructing agencies built housing, barracks, and essential services to create temporary communities of laborers and planners, providing space for life on and off the job. The project had a definitive hierarchy, not only for river uses, but also for the men enlisted to transform it. This was reflected not only by the color of hardhats, tasks assigned, and scale of wages, but in the communities built to host the human resources engaged in the project. Bureaucrats administered the project, contractors bid on jobs,

engineers planned and checked work, unions represented the collective interests of laborers, skilled laborers deployed their craft, unskilled laborers their energy – a multitude of people deployed in a network to construct the Seaway system. But tourists also came to the river – interlopers in the truest sense of the word. The Seaway project became a major attraction, a place to witness the transformation of a river on an unprecedented scale first hand. This section attempts to capture a glimpse of the people that participated in the project and their experiences by illuminating a sampling of their stories.

Administrators, Seaway enthusiasts, experts, and potential contractors were among the first to descend on the river in the Seaway's name. By late 1954, men crawled all over the St. Lawrence. They explored the worksite, studied plans and technical drawings, and contractors submitted bids to the relevant agencies. The agencies collectively awarded more than 1,000 contracts to firms from all over the continent and Europe. The project meant big business and offered contracts of varying sizes. Two firms – Merritt, Chapman, & Scott and the Perini Corporation – took more than \$100 million in contracts between them. To execute their tasks, contractors and construction agencies enlisted experts from all over. For example, the Seaway Corporation's deputy project manager for consultants, Ellis Armstrong, had worked on the preliminary designs for the Aswan Dam in Egypt, as well as 32 dam projects for the U.S. Bureau of Reclamation.<sup>86</sup> Agencies also drew heavily on expertise developed on TVA and BPA projects. PASNY's chief contractor Uhl, Hall, and Rich borrowed liberally from this pool of expertise, and the firm's three partners each had a direct affiliation with the TVA.

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<sup>86</sup> Howard Rosen, "Ellis Armstrong, Public Works Icon, Dies," *American Public Works Association Website* <http://www.apwa.net/Resources/Reporter/Articles/2001/4/Ellis-Armstrong-public-works-icon-dies> <Accessed on September 3, 2013>.

William F. Uhl served as the chairman of the TVA's board of consultants; Wilfred M. Hall headed the construction unit for the TVA's Wheeler Dam and oversaw water resource development in Puerto Rico for more than a decade; and George R. Rich served as the TVA's chief design engineer between 1936 and 1945.<sup>87</sup> Much of the Seaway's young engineering talent came from Bureau of Reclamation projects, especially the Hungry Horse Dam in Montana. Constructed between 1948 and 1953, following the completion of Hungry Horse, many of the engineers easily transitioned to the Seaway project.<sup>88</sup> The Corps of Engineers initiated a two-year training program for junior engineers, and their Buffalo office hired college graduates from the Great Lakes region to work on design and implementation of Seaway plans at Massena.<sup>89</sup> All agencies borrowed expertise across bureaucracies and boundaries, and these experts descended on the river to learn its secrets, make it legible, and supervise its transformation.

Like this cadre of engineers, the typical skilled Seaway worker previously worked on hydroelectric projects for the TVA, Bureau of Reclamation, Army Corps of Engineers, or Ontario Hydro. These men came from all over Canada and the United States, often living a somewhat transitory life and moving from one construction job to the next. Many honed their craft on earlier jobs or completed an apprenticeship in their trade. In Canada, much of the skilled labor moved to the Seaway site from the east coast or came from an established pool of transient tradesmen who had worked on numerous projects for Ontario Hydro in the past – such as Niagara Falls or the Long Lake Diversion. Canadian laborers typically found jobs through the National Employment Service (NES),

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<sup>87</sup> “Uhl, Hall and Rich Firm Making Engineering Studies, Designs for Power Authority,” *Massena Observer*, August 8, 1955, 1.

<sup>88</sup> Parham, *The St. Lawrence Seaway and Power Project*, 75.

<sup>89</sup> “U.S. Corps of Engineers is Getting Bright Young Engineers with Ideas,” *Massena Observer*, August 1, 1955, 1.

and American laborers found them through contractor or union employment solicitations.<sup>90</sup> The construction agencies and their contractors gave locals preferential employment, but pervasive labor shortages compelled them to look further afield for skilled labor. By 1956, 38 percent of skilled labor on the Canadian side and 50 percent of skilled labor on the American side arrived from outside the St. Lawrence Valley.<sup>91</sup> At the peak of construction in August of 1956, Canadian contractors employed about 4,550 tradesmen at the power dam, and their American counterparts employed about 5,900.<sup>92</sup>

Native Americans also participated in the project as part of the skilled workforce. For example, steelworkers from the Kahnawake and Akwesasne reservations came by way of the river to deploy their craft in the project. Like other local communities, the First Nations had an ambivalent relationship with the project; contemptuous at times for the loss of lands and the perception that *their* river was under siege, but realizing that it provided lucrative employment opportunities not available on the reservation. The backgrounds of the workers varied dramatically, as did their skill sets. The project employed steelworkers, carpenters, painters, masons, electricians, operating engineers (for machinery), pipe fitters, concrete workers, various inspectors, etc. Wages varied with skill set, experience, and side of the border. On the American side the top wages, for operating engineers and steelworkers, ranged from \$3.10 to \$3.30 an hour; whereas Canadian wages typically ran between \$0.05 to \$1.05 lower.<sup>93</sup> This wage disparity and

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<sup>90</sup> Howard Fullard, "Inundation Edition: An Historical Issue Tracing the Conception and Progress of the Giant Project: Central Employment Bureau Important Cog in Project," *Cornwall Daily Standard-Freeholder*, June 28, 1958, 24, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers."

<sup>91</sup> Mabee, *The Seaway Story*, 180.

<sup>92</sup> "Employment on the Power Project Soon to Rise to 10,000 figure; 5,900 Worked on the American Side of the St. Lawrence River in July 1956," *Massena Observer*, February 18, 1957, 7.

<sup>93</sup> Mabee, *The Seaway Story*, 179. There was also a substantial disparity between the wages of a skilled and unskilled laborer. For example, if you shoveled dirt or carried bags of cement you were paid about \$0.90

relaxed immigration policies encouraged many Canadian workers to seek employment across the river. However, wages on both sides exceeded the standard rates of pay. In this sense, Seaway workers had disposable income to inject in the local economy or to support a family.

Despite the lucrative wages, as the pace of construction accelerated, around August 1955, workforce shortages became chronic. First, operating engineers for the massive mechanical deployment on the Canadian side were in short supply; by the spring of 1956, the need for carpenters and masons on the American side became especially acute. To address shortages, the St. Lawrence Contractors Association organized recruitment drives to enlist workers from the Midwest and South. By the second year of construction, the workforce's composition substantially varied in geographic origin, procuring people from all over the U.S. and Canada to participate in this attempt to tame the mighty St. Lawrence. Unlike earlier, 19<sup>th</sup> century envirotechnical systems constructed at the same locales, the Seaway project did not specifically employ foreign or migrant labor.

All American workers were expected to join the proper union for their trade, within a predetermined timeframe.<sup>94</sup> Unions served as important mediators between workers and the agents responsible for construction. Unions established hiring halls to process contractors' employment requests, accept applications, and deploy hired workers

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per hour. On the lower-skilled end, painters earned the highest wages, set at about \$2.00 per hour. See: Parham, *The St. Lawrence Seaway and Power Project*, 152.

<sup>94</sup> For example, American carpenters joined Local 747; painters joined Local 32; masons joined Local 81; and the Laborers International Union of North America opened an office in Massena and established Local 322. Local 545 represented operating engineers, who had some of the most challenging jobs on the project and operated expensive equipment. For more information on these Locals and the Unions they represented, see: Parham, *The St. Lawrence Seaway and Power Project*, 104-121.

to the appropriate construction sites. They negotiated generous wages and contracts that included clauses obliging contractors to adhere to established pay scales.

On occasion, the relationship between organized labor and project management proved contentious. The most illustrative and critical instance of this was a strike staged by the members of Local 545 of the Operating Engineers Union. On March 12, 1956, this strike stalled work on the entire project. Local 545 picketers blocked the entrances to worksites and members of other unions did not attempt to cross their lines. In anticipation of the incipient strike, contractors shut down and secured equipment to prevent sabotage. The operating engineers' contract expired in December 1955, and their disaffection centered on a carryover clause in the contract that stated that wages remained fixed throughout the contract's duration. The local demanded a 30¢ per hour raise over two years, and contractors countered with a 10¢ increase. After a full week of arrested development, the quick intervention of state mediators facilitated a settlement. The two parties settled on a 25¢ increase across the board, and wage adjustments for operators of special types of heavy equipment effective January 1, 1957.<sup>95</sup>

On the Canadian side, Ontario Hydro officials pursued a different approach to labor recruitment and relations. In 1955, Richard Hearn, Ontario Hydro's new chairman, and G. Russell Harvey, chairman of the Allied Construction Council announced an agreement to extend an earlier labor-management pact – negotiated for work at Niagara

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<sup>95</sup> “River Projects Stalled as 1,200 Workers Strike,” *Watertown Times*, March 12, 1956, 22; “State Mediation Board Enters Project Strike,” *Watertown Times*, March 13, 1956, 19; and “Project Activity Resumed as Workers Get Increase,” *Watertown Times*, March 19, 1956, 10. In the project's aftermath, both the contractors and Local 545 faced a review of this revised employment arrangement by the National Labor Relations Board (NLRB). The NLRB found that the companies' exclusive use of Local 545 for employment constituted an unfair discrimination against nonunion workers and other Locals, in contravening the National Labor Relations Act. The ruling carried no punitive measures or penalties, but served as a warning that similar hiring practices would not be tolerated on future projects (United States Court of Appeals, Second Circuit, No.78, Docket 25613).

Falls – to the Seaway project. The Allied Construction Council represented seventeen unions, and the agreement delineated standard union wages, working conditions, and formed a safety committee to look into accidents and suggest performance improvements.<sup>96</sup> This cooperative approach that carefully delineated the management-worker relationship in advance led to smooth relations between participating parties. Ontario Hydro set up an office within the Cornwall branch of the NES, and potential construction workers applied for jobs at their local NES branch, and waited to move to the Cornwall area when a position became available. By the completion of the power project, the NES had deployed over 22,420 clerks, operators, tradesmen, and laborers to the St. Lawrence.<sup>97</sup>

Although female workers rarely held positions outside of menial clerical tasks, wives and families accompanied workers on both sides of the border. Claire Parham has collected and published a series of oral accounts voicing female experiences on or adjacent to the Seaway project. She notes that many of these women “struggled to live in a world of new opportunities that they could not take advantage of.”<sup>98</sup> Despite limited opportunities, women interacted with the project and river in meaningful ways. Women who accompanied their husbands joined local churches, recreational leagues, and formed social support networks for their transient families. Their relationship with local communities was often strained. Local residents tended to view these interlopers with hostility and resentment, and the workers’ families sometimes found the region “isolated”

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<sup>96</sup> See: Parham, *The St. Lawrence Seaway and Power Project*, 121; and the final edition of *St. Lawrence Power*, a free Ontario Hydro publication for workers and contractors that details accident totals and mitigation procedures: Hydroelectric Power Commission of Ontario, *St. Lawrence Power*, September 5, 1958, 4, 12, 21, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 80A, Folder 2, “St. Lawrence Power, 1958.”

<sup>97</sup> *Ibid.*

<sup>98</sup> Parham, *The St. Lawrence Seaway and Power Project*, 248.

and its residents “very backward.”<sup>99</sup> Some of this tension was mitigated by mutual participation in church and PTA activities, but the relationship remained tepid at best.

Local communities struggled to accommodate the influx of men, women, and children, and the constructing agencies did not want to “waste” valuable resources constructing housing and social spaces for temporary employees. Housing shortages became commonplace, and had a definite class dimension. The engineers employed by Uhl, Hall and Rich typically lived in the “Buckeye Development,” a series of small homes built by the contractor and rented out to employees for a modest rent. Initially, the Army Corps of Engineers planned on constructing housing for all American Seaway workers; however, the Development Corporation and PASNY, especially Robert Moses, did not want to waste valuable construction resources and time on temporary domiciles. Moses felt that the local communities could absorb the added population, and that town officials should shoulder the burden of constructing additional accommodations.<sup>100</sup> Consequently, most of the transient workforce and families lived in a series of temporary trailer parks. These modest accommodations fostered a sense of community among the workers and their families, but also reified the divide between locals and interlopers, whose homes reflected the mobility of their lives.

Women who married transient workers are a particularly interesting group. To some, the deluge of eligible bachelors that accompanied the project was a godsend, and provided a perceived means of escape from their parochial lives.<sup>101</sup> However, not everyone viewed the arrival of young, single men with such expectancy. Many locals

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<sup>99</sup> Irene Bryant, the wife of Jack Bryant who worked as a claims adjustment department of Uhl, Hall and Rich, on living in Massena, in: *Ibid.*, 252-253.

<sup>100</sup> *Ibid.*, 258-259.

<sup>101</sup> *Ibid.*, 257.

worried about the crime and moral degeneration they perceived would accompany their arrival. These fears were not completely unfounded – crime did markedly increase, and local papers advocated the augmentation of local police forces to combat these incidents.<sup>102</sup> These communities’ changing social dynamics, anticipated and real, are further discussed in the following chapter; the arrival of Seaway workers inexorably altered the region’s social milieu.

The last group of Seaway interlopers was the most transient – the tourists and visitors who arrived expressly to witness the river’s transformation. The project attracted a massive influx of tourists, and the construction agencies in cooperation with local chambers of commerce facilitated this recreation demand by constructing viewing platforms at designated visitor sites and publishing promotional materials encouraging tourism.<sup>103</sup> This influx stimulated local economies and provoked an unprecedented level of interest in the region. By mid-1958, local observers estimated that the project had attracted more than a million visitors.<sup>104</sup> People came to experience the *envirotechnical sublime*, which evoked a sense of awe at both the power of the river and the system of men and machines deployed to transform it. The face of the earth was being reshaped before their eyes. Some came to fish in the famous Long Sault Rapids before they disappeared, artists and photographers captured the shore’s twisting jack-pines and the

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<sup>102</sup> “More Police Seen Needed to Handle Crime,” *Potsdam Courier-Freeman*, July 30, 1955, 20, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76, Folder 2, “Periodicals.”

<sup>103</sup> For example see: “Agencies Preparing for Tourist Influx,” *Watertown Daily Times*, February 27, 1956, 15; “Section 11, St. Lawrence Seaway-Power: Tourist Facilities,” *New York Times*, June 29, 1958, 15; “St. Lawrence Seaway-Power Project and Tourist Guide: Hydro-Project Big Magnet for Tourists,” *Cornwall Daily Standard-Freeholder*, June 29, 1957, 36; “Massena on the March! 1956-1957 Program of Work,” Massena Chamber of Commerce, Pamphlet, and “Playdays in the Playland of the St. Lawrence Valley,” SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 59, Folder 9, “Planning in the Massena, New York Area.”

<sup>104</sup> “Over a Million Visitors,” *Cornwall Daily Standard-Freeholder*, June 28, 1958, 40. Also see: “Visitors to U.S. Project at a Million,” *Cornwall Daily Standard-Freeholder*, June 28, 1958, 44.

river's swells, others came to shoot the rapids by boat one last time. Many came to see the river's bed laid bare. Zoologists searched the bed for specimens; a ship pilot who shot the rapids thousands of times wandered around the river bottom awestruck at the rocks that created the river's ferocity; one local Ontario boy found eleven cannonballs, presumably from the War of 1812, and nearly fought his own war with the Provincial Government to keep them.<sup>105</sup> Bureaucrats and engineers came to marvel at how the project was coordinated and executed, on both a technical and administrative front. The reactions to the site varied from unbridled techno-enthusiasm to abject sadness at the experiential and aesthetic loss, with most falling somewhere on a continuum between. The scale of the project and power of the river being tamed took center-stage in a human-environmental drama that enlisted thousands of workers, administrators, their families, local communities, tourists, and a river in flux.

*Moses (et al.) Parts the Waters*

One of the most intensive and conspicuous parts of the job was draining and excavating the riverbed for the imposition of Big-Mo and the two control dams. In the International Section, construction began with three giant cofferdams to expose the river's bed. Workers first built a huge cofferdam designed to shut off the River's south channel. Just above the Long Sault the water moved swiftly, and the water's velocity impeded cofferdam construction. A manager for PASNY and its chief contractor, claimed: "The flow of the river was the first thing that made this project so much more complicated than any other in the history of the United States."<sup>106</sup>

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<sup>105</sup> Mabee, *The Seaway Story*, 200-201.

<sup>106</sup> This was claimed by Joe Marmo, PASNY's Massena manager and a claims evaluator for Uhl, Hall, and Rich, and quoted in: Parham, *The St. Lawrence Seaway and Power Project*, 44-45.

To arrest the river's flow, workmen began by floating wooden cribs into the water along the shore and filling them with rocks, to create a platform for a massive crane to extend its boom high above the river channel. Using its boom, the crane grabbed long and thin – about 15 inches in width – steel piles, positioned them over the river and into wooden templates specifically designed to hold them in place, and proceeded to pile-drive them one-by-one into the river's bed. Following the driving of each pile an intrepid “top man,” secured by a life belt, stood atop the pile and high above the rushing water, and precariously reached from his perch to guide the next pile into the corresponding groove of the pile on which he rested. Pile by pile, the workers formed steel cells in the riverbed about 60 feet in diameter, each forming a kind of cofferdam superstructure. As each cell was completed, trucks filled it with gravel and rock, and the crane moved forward onto the next cell to continue the pile-driving further into the river. Concurrently, workers dug a cut across Long Sault Island to divert the river's flow into its north channel. By the time the cells extended to the middle of the south channel, where the river's velocity was swiftest, and their shunting of the water through a narrowing channel served to accelerate its movement, the workers found that the St. Lawrence's force began knocking over their piling. To deflect some of the water's force, workers, using a derrick, drug massive concrete slabs into the river and advanced the blocks alongside cell construction. Cell by cell, the cofferdam advanced across the river's south channel until it reached Long Sault Island. With the river's flow removed from the south channel, the workers pumped the water out of the impounded area, allowing workers to construct the first half of the Long Sault Control Dam in the dry.<sup>107</sup>

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<sup>107</sup> “Buildings of Two Cofferdams Beset With Many Difficulties,” *Cornwall Daily Standard-Freeholder*, June 28, 158, 4, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B,

At the same time, a contractor for Ontario Hydro built a second, much larger cofferdam, in the river's north channel, below the proposed site of the power dam – between the Canadian mainland and Barnhart Island.<sup>108</sup> Using the same method as the cofferdam erected for the Long Sault Control Dam, a massive crane drove steel pilings into semi-circular cells, 64 feet in diameter, but this task proved more perilous. Ice, the perennial foe of Seaway enthusiasts, knocked down portions of the steel piling driven into the river's bed, and tipped over a wooden barge, dumping a crane into 30 feet of rushing water. One cell of the cofferdam burst open when the some of the interlocking grooves between the piling split apart. A truck dumping gravel into a cofferdam cell, tipped too far backward and plunged into the deep water within the cell; the driver narrowly escaped by climbing through the truck's window, floating up to the surface ice, and finding a place to break through where he was rescued by rope. A young worker from Quebec was less fortunate. This young man slipped off a tug operating near the cofferdam, and despite the crew's efforts to rescue him, he floated downstream and drowned.<sup>109</sup> The St. Lawrence's icy waters exacted a toll, material and human, while workers attempted to divert its flow.

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“Canadian Newspapers;” “Long Sault Dam Job Involves Blocking Surging Rapids,” *Potsdam Courier-Freeman*, June 30, 1955, 4; “Hard Task in Taming Long Sault Rapids,” *Cornwall Daily Standard-Freeholder*, June 29, 1957, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers;” Mabee, *The Seaway Story*, 180-182; Stagg, *The Golden Dream*, 197-198.

<sup>108</sup> The contractor was Mannix-Raymond Limited of Montreal, see: “4,200-Foot Cofferdam Links Mainland, Island,” *Cornwall Daily Standard-Freeholder*, June 28, 1955, 20, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers;” and Parham, *The St. Lawrence Seaway and Power Project*, 42.

<sup>109</sup> For a summary and brief description of accidents on the project, see: Ontario Hydro, “St. Lawrence Power Project, Monthly Accident Summary,” June 1958, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 63, Folder 3, “Ontario Hydro.” For descriptions of the specific in-text accidents, and other incidents, see: “Ice Causes First Major Accident,” *Cornwall Daily Standard-Freeholder*, June 28, 1958, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers;” Stagg, *The Golden Dream*, 205-206; Chevrier, *The St. Lawrence Seaway*, 84-85; Mabee, *The Seaway Story*, 181-182. According to M. Oettershagen, the SLSDC's deputy administrator, the lost time

Despite these setbacks, cofferdam construction proceeded across the river's north channel, until June of 1955, seven weeks behind schedule, 60 cells composed of 12,000 tons of steel piling, filled with over 1,000 cubic-yards of rock and soil, stretched 4,200 feet from the Canadian mainland to the southeast end of Barnhart Island.<sup>110</sup> The river's water continued to pass along the south side of the Island, and when workers completed the first half of the Long Sault Control Dam, they opened its gates and restored the south channel's flow, in preparation for the dewatering of the rapids and power site. To accommodate American access to the Big-Mo worksite, PASNY constructed a pontoon bridge that connected the American shore with Barnhart Island. As workers attempted to float it into position, a winch line pulling the makeshift bridge toward the shore snapped, mangling one man's leg and slicing off another's. After the incident the workers began referring to the St. Lawrence as "Cripple Creek." Two days later workers winched the temporary bridge into place, securing American access to Barnhart Island and the Big-Mo site. One of the bridge engineers commented that all his prior experience had only served as a "primer for work on the St. Lawrence." Another commentator reflected that the temporary bridge cost more than a million dollars... and two legs.<sup>111</sup>

With the downstream cofferdam in place, and the south channel reopened, workers began to construct a final cofferdam about two and a half miles upstream, just west of the Long Sault Rapids – between the Canadian mainland and a site near the east end of Long Sault Island – to expose the riverbed at the Rapids and Big-Mo's worksite.

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due to accidents was: 5 hours per million man hours for the Corporation, 22 hrs for PASNY, and 55 hrs for Ontario Hydro and the Seaway Authority combined. See: Mabee, *The Seaway Story*, 290 (Fn42).

<sup>110</sup> "4,200-Foot Cofferdam Links Mainland, Island," *Cornwall Daily Standard-Freeholder*, June 28, 1955, 20, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers;" and "4,200-Foot Cofferdam is Built," *Massena Observer*, August 8, 1955, 3.

<sup>111</sup> A.S. Wikstrom, "Contractor Finds St. Lawrence Bridge Substructure No Picnic," *Civil Engineering*, Vol.25 (December 1955), 836; Mabee, *The Seaway Story*, 183.

This final cofferdam posed a new set of challenges. The water's intense velocity and hard riverbed made driving steel pilings infeasible, so workers erected a tower on the Canadian shore and a corresponding one on Long Sault Island.<sup>112</sup> Between these towers, heavy steel cables hung over the water and suspended a large bucket capable of holding 25 tons of rock. The bucket moved back and forth across the channel depositing an equally distributed layer of stone with the intention of slowly building a rock cofferdam that would incrementally rise above the water level and cut off the river's flow. The process went slowly and an impatient contractor attempted to accelerate the process by dumping additional loads of stone into the river from the Canadian shore. This effectively constricted the rushing water into a smaller gap, increasing its velocity and washing the stone downriver. The dumping of stone could not keep pace with the river's ability to wash it away; and at one point, the river washed 30 feet of cofferdam downstream.<sup>113</sup> In the summer of 1955, the Corps of Engineers came up with a novel solution. They designed and built a "hexapedian" made of steel, an object that resembles the obstacles that littered the shores of Normandy on D-Day to impede landing craft (referred to as "Czech Hedgehogs" or *ježek*). Workers tethered the hexapedian to the shore and released it above the incomplete cofferdam and hoped it would catch on the rocks in the gap between the two sides of the cofferdam. The first one washed right through the gap and downstream, but on a second attempt, the hexapedian caught the rocks, became lodged in the gap, and formed a structure on which more rock could be

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<sup>112</sup> According to Joe Marmo of Uhl, Hall and Rich the water flowed at over 300,000 cfs. See the interview with Joe Marmo recorded in: Parham, *The St. Lawrence Seaway and Power Project*, 45.

<sup>113</sup> The water was allegedly moving at 300,000 cfs, as told in an interview with Joe Marmo a dam engineer and claims evaluator for Uhl, Hall, and Rich. See: *Ibid.*, 44-45. Also see: Stagg, *The Golden Dream*, 199.

poured from overhead. Slowly the final gap closed, and the cofferdam sealed the river's north channel.<sup>114</sup>

As pumps began to draw out the water between the two cofferdams, fishermen and volunteers from nearby Kingston, ON, supervised by Provincial Conservation Officers from the Ministry of Natural Resources, netted fish in the dwindling waters. They transported the game fish, including 300 pike and 800 pickerel, into the old canal where they could find their way back into the river below Cornwall. Coarse fish – the varieties not prized by fishermen – were caught and dressed to sell, including 1,074 lbs of rock bass and 13,800 lbs of suckers. This episode reveals the social construction of biotic value. Fisherman and conservationists prized certain fish over others for a set of culturally contingent reasons.<sup>115</sup> With the stranded fish removed and the pumps continuously working, the once mighty Long Sault Rapids took only five days to drain. The riverbed had been laid bare, its secrets revealed – and it looked like a mess of weeds, rocks, mud, and gravel. Tourists and locals came to see the drained rapids in droves, threatening to severely congest local highway traffic. The adventurous walked out into the over two-mile stretch of rapids bed and explored the glacial rocks rounded by the eroding force of water for the past 6,000 years. In the middle of the channel they found flat limestone shelves, smoothed by the water's velocity. The occasional large rock heaved upward and had created turbulence in the stream. Zoologists poked around the crevices looking for specimens that lived in the deeps of the swift water. Would be

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<sup>114</sup> This story is told in: Stagg, *The Golden Dream*, 199. However, Joe Marmo remembers a slightly different version of the story, with two failed attempts. Parham, *The St. Lawrence Seaway and Power Project*, 45.

<sup>115</sup> "Remove Fish at De-Watered Dam Area," *Massena Observer*, August 8, 1955, 4; "Thousands of Fish Taken from Dewatered Dam Area," *Cornwall Daily Standard-Freeholder*, June 28, 1955, 9. SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers"; and "Few Game Fish in Rapids Area," *Cornwall Daily Standard-Freeholder*, June 29, 1957, 34. SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers."

treasure-hunters found relics of ships and wars past. The sight evoked a wide range and combination of emotions from nostalgia to amazement, culminating in a sense of the envirotechnical sublime, a simultaneous sense of awe toward the river's power and people's ability to subvert it.

With the Long Sault dewatered, the heads of the two power agencies prematurely declared that the “uncertainties” of the project “have been largely eliminated.”<sup>116</sup> The agency heads once again oversimplified the task set before them, the exposed riverbed seemed more legible than the soundings that had painted a highly abstract image of the river's bottom. However, even though they could see the bottom, they confronted a more complex reality just below the surface. The task of excavating the riverbed presented some of the most inimical challenges faced throughout the construction process.

### Soils

In 1689, French missionaries, under the supervision of Dollier de Casson, tried to excavate around the Lachine rapids with pickaxes and mattocks; during the American Revolution, Loyalist soldiers by-passed the rapids between Lake St. Francis and Lake St. Louis using human and animal energy; and in the 19<sup>th</sup> century, workers dug the Welland and St. Lawrence canals using new technologies – like Oliver Phelps' simple pulley system (1827) – and with a mix of organic energy deployed by human and other animal workers.<sup>117</sup> 20<sup>th</sup> century interventions occurred on a markedly different scale. During the Seaway project, the amount of organic energy expended declined in proportion to the mechanical energy spent. Although the pace and power of excavation increased immeasurably, unforeseen soil conditions in an unreceptive riverbed bedeviled the

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<sup>116</sup> Quoted in: Mabee, *The Seaway Story*, 201.

<sup>117</sup> See the first chapter above.

process. This serves as a reminder that in spite of the amplified power and pace of transformation, our efforts never wholly conquer nature – we only co-opt it to specific ends.

One visiting Spanish engineer reportedly exclaimed that he had never seen so much machinery in one place in his life, and two of Seaway project’s engineers reported to the American Society of Civil Engineers that they believed the Seaway gathered the largest concentration of excavating equipment in history.<sup>118</sup> The volume and power of the machinery deployed gave a false sense that the excavation job would be easy – one congressional representative proclaimed it a simple “dirt-moving” job.<sup>119</sup> Project engineers had been furnished with plenty of prior information. In 1940, the Corps spent a year and a half studying the International Section. They took geologic core samples, made detailed soundings of the riverbed, and dug test excavation pits along the shoreline. Ontario Hydro continued this work in the early 1950s, creating a bi-national, abstracted view of the river’s bottom. But when they collaboratively dewatered the rapids, exposed the bed, and began to dig, the river told a different story.

The bottom of the St. Lawrence varies in form and material composition. At each construction site excavators confronted different soils. The Lachine’s bottom was comprised of mostly shale, which crumbled easily and presented no serious difficulties. The bottom at the Beauharnois was hard limestone and required blasting and drilling before excavation, but the Seaway Authority planners anticipated the tough stone and

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<sup>118</sup> A copy of the following paper is held in St. Lawrence University’s Archives. Ellis Armstrong and Richard Burnett, “Earth Excavation and Related Soil Problems on the St. Lawrence Power and Seaway Project,” Paper Given to The American Society for Civil Engineers Convention, Buffalo, NY, June 1957, 3, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 3, “Field Notes for the Seaway Story.”

<sup>119</sup> Rep. Albert Thomas of Texas, reported in: “Timing on Seaway Still Uncertain Says Castle; No Ground Breaking Plans, *Massena Observer*, November 1, 1954, 1.

excavation proceeded apace. The toughest excavation in unexpected conditions occurred in the International Section.

Digging in the International Section presented two separate soil challenges. At the site of the Iroquois and Eisenhower locks, excavating contractors encountered massive deposits of glacial till. Till is sediment left by glacial movement during the last Ice Age. It weighs almost as much as concrete and is nearly as tough when it dries out. The Jack and Jim Maser Corporation of Pennsylvania won the bid to excavate the site of the Eisenhower Lock, and brought eleven diesel scrapers from the coalfields of their home state to complete the job. However, the scrapers could not handle the till economically and, after excavating nearly a million cubic yards by 1956, the Masers abandoned the job only halfway through its completion. Daniel J. McConville, the co-proprietor of a small family owned company that received a number Seaway contracts, retrospectively described the experience of excavating the till: “The abrasiveness of hard packed till was unbelievable.” He remembered shovels’ removable steel teeth, which normally lasted six months or more, having to be changed after every shift. Quarrying the tough glacial material reduced the hour-life of tractor crawlers by two-thirds, and contractors could not make enough money to cover the continual replacement of their scrapers’ hardened steel cutting edges. The Masers had bid \$0.34/cubic yard for material excavated at the Eisenhower Lock site, but subsequent bidders charged \$0.80/cubic yard to complete the work.<sup>120</sup>

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<sup>120</sup> Tractor crawlers had a normal operating life of 5,000 hours. Daniel J. McConville. “Seaway to Nowhere,” *Invention and Technology Magazine*, Vol.11, No.2 (Fall 1995), 35-45. Also see: “Glacial Till Holds Secret to Construction of Dikes on Seaway and Power Job,” *Watertown Daily-Times*, November 14, 1955, 6.

At the Iroquois Lock, the Canadian contractor for the Seaway Authority had to blast the glacial till before digging, and the contractor's site superintendent said: "you will never get excavation work any tougher on this continent." Like the Eisenhower job the Seaway Authority eventually doubled the contract price per cubic yard.<sup>121</sup>

The contractors' interaction with till illustrates continued technological limitations in the transformation of the St. Lawrence. The planners thought they rendered the riverbed legible and primed for mechanical intervention, however the ancient soils seemed to resist their efforts at nearly every turn. In 1954, the Corps dug four test pits along the proposed route of the Wiley-Dondero Canal. Here they discovered a "very unusual material, found nowhere else in the United States," and invited potential contractors to inspect it for themselves.<sup>122</sup> What they discovered was a layer of thick marine clay, a soil that achieved Seaway infamy. St. Lawrence clay pervaded the International Section. Excavators found that when left undisturbed the clay seemed firm, but when worked it became soft and pliable, adhering to their machinery and the buckets of dump trucks. Visitors and workers marveled at the clay's consistency, some even sent it home as a toy for their children, like a type of St. Lawrence *Play-Doh*. One Corps official justifiably declared the clay to be the "heaviest dirt and stickiest mud in the United States." The combination of clay and till appeared most pervasive and pernicious at the site of Snell Lock (just above the mouth of the Grass River). Given these material and logistical challenges, excavation work fell consistently behind schedule, and a Corps' representative later claimed that the Wiley-Dondero Ship Canal represented the "most

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<sup>121</sup> "News Report: The St. Lawrence Seaway and Power Project," *Engineering News Record*, June 13, 1957, 32. For a summary of the cost and difficulty involved with excavating St. Lawrence soils, see: Robert F. Leggett, "Lecture No.13: Geology and Geotechnical Engineering," *Terzaghi Lectures, 1974-1982*, Geotechnical Special Publication No.1 (New York: American Society of Civil Engineers, 1986),143-146.

<sup>122</sup> Becker, *From the Atlantic to the Great Lakes*, viii.

complicated part of the project.”<sup>123</sup> Like the Masers’ experience at the Eisenhower Lock, the Dutcher Corporation, who won the contract to excavate the Snell Lock’s site, brought in diesel shovels, scrapers, and draglines to dig the riverbed; but when the clay impeded their efforts and clung to their trucks, the company fell behind and went bankrupt.<sup>124</sup> The soils claimed two companies, innumerable man-hours, and thousands of dollars in damaged equipment. Even the Gentleman – who could bite out a cellar sized hole in the riverbed with its massive bucket, and threw up such a pile of earth that workers took to calling it “Mount Moses” – could not excavate economically. In fact, Roger Badgett claimed that the Gentleman’s work did not even come close to turning a profit.<sup>125</sup>

Badgett’s complaint resonated among the contractors at work on the excavation portion of the project. Although the Corps’ test pits revealed the presence of the marine clay in 1954, it seems that the Corps and project contractors underestimated its scope and the challenges it presented. In light of these soils challenges, the Corps made major changes to the Canal’s specifications. They redesigned its banks, giving them a gentler slope, and deployed 19 deep-well pumps to drain the bedrock and keep the clay drier for excavation, at an additional cost of \$1.5 million.<sup>126</sup> The Canadian Department of Transportation’s engineers also underestimated the cost of excavation. For instance, they completely omitted the \$12 million required to blast and excavate a rocky seven-mile stretch of the Welland Canal from their original cost estimates. By 1957, the constructing agencies learned important lessons from the difficult excavating experience. For

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<sup>123</sup> Ibid., 64, 78-79.

<sup>124</sup> Becker, *From the Atlantic to the Great Lakes*, 70. In another similarity to the Maser story, the Dutchers bid \$0.85/cubic yard, the subsequent contractor was awarded \$1.26/cubic yard to finish the job. Also see: United States, Congress, House of Representatives, Committee on Public Works, *Annual Report of the St. Lawrence Seaway Development Corporation for 1957*, House Document 326, 85 Congress, 2 Session, (Washington, DC: GPO, 1958), 18-23, 38-39.

<sup>125</sup> Mabee, *The Seaway Story*, 186.

<sup>126</sup> Mabee, *The Seaway Story*, 188; and Becker, *From the Atlantic to the Great Lakes*, 78-79.

example, PASNY engineers explained that while scrapers proved effective at removing topsoil and handling already excavating till, they should not have been deployed in the main excavation of the Eisenhower Lock. Workers also found that marine clay could best be handled in winter when it remained firm and did not stick to the trucks and excavating equipment.<sup>127</sup> Planners and workers learned these valuable lessons through tactile experience with the soils, not the abstracted view of preconceived plans; they also learned them behind schedule and at great expense.

The constructing agencies justifiably worried that their contractors would later make devastating legal claims against them, on the grounds that had been given inaccurate information about the soils. The agencies sought to indemnify themselves against this possibility. They reviewed the wording of job specifications and argued with lawyers and geologists about the specific meanings of terms like “compact soil” and “very compact soil.” They also established pre-flood, anti-claims initiatives to forestall lawsuits being leveled against them after the evidence had been covered in more than 20 feet of water. These initiatives included sending men up and down the excavation banks to take soil and surface samples, they drilled far into the earth to collect subsurface samples, took samples directly from the buckets of draglines, made diagrams of excavation banks, used stopwatches to time how long a power shovel could fill a truck with marine clay, and took innumerable photographs to document their work and the project. They also continuously dug test trenches up and down the river’s bank – their

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<sup>127</sup> Ellis Armstrong and Richard Burnett, “Earth Excavation and Related Soil Problems on the St. Lawrence Power and Seaway Project,” Paper Given to The American Society for Civil Engineers Convention, Buffalo, NY, June 1957, 3, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 3, “Field Notes for the Seaway Story.”

slogan was “a trench a day keeps the contractors at bay.”<sup>128</sup> To dramatize the excavation for the layperson, they made movies of men cutting into the glacial till with kitchen knives and garden trowels to illustrate how the soil could be removed with tools the average person understood. The agencies stashed all of these records away for the possibility that a litigating contractor might claim that the soils could not be excavated under the conditions described to them. The testing was supposed to be kept secret and the testers never disclosed their purpose, but their presence was obvious to the contractors who saw them scurrying all over the project sites. In response, the contractors occasionally did their own testing and documented their excavation experiences. In the end, the contractors collectively submitted additional claims to the construction agencies that totaled \$108 million.<sup>129</sup> It is unknown how many and in what amounts the agencies settled these claims, but through litigation and negotiation the parties resolved the disputed contracts.

Early on, the planners attempted to abstract the riverbed into a legible geologic map, but the St. Lawrence’s messy reality challenged their simplifications and its soils tested their ability to effectively excavate its bed. The excavation process illustrates the confrontation between planners’ designs and a more complex and difficult reality that awaited them at the river’s bottom.

### Materials

As workers fought with the soils in the river’s bed, they introduced new materials into the system they constructed. Ships moved earth from the Welland Canal to construct Seaway dikes at Cornwall and Massena. This upriver soil augmented the material dug

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<sup>128</sup> Quoted in: Mabee, *The Seaway Story*, 188.

<sup>129</sup> The figures allegedly were: \$10 million for the Seaway Development Corporation, \$44 million for the Seaway Authority, \$22 million for Ontario Hydro, and \$32 for PASNY, see: *Ibid.*, 189.

out of the river onsite, helping to change the river's banks and landscape. However, the most crucial material deployed during the construction is concrete, the central building material for all the structures erected to facilitate navigation and power production.

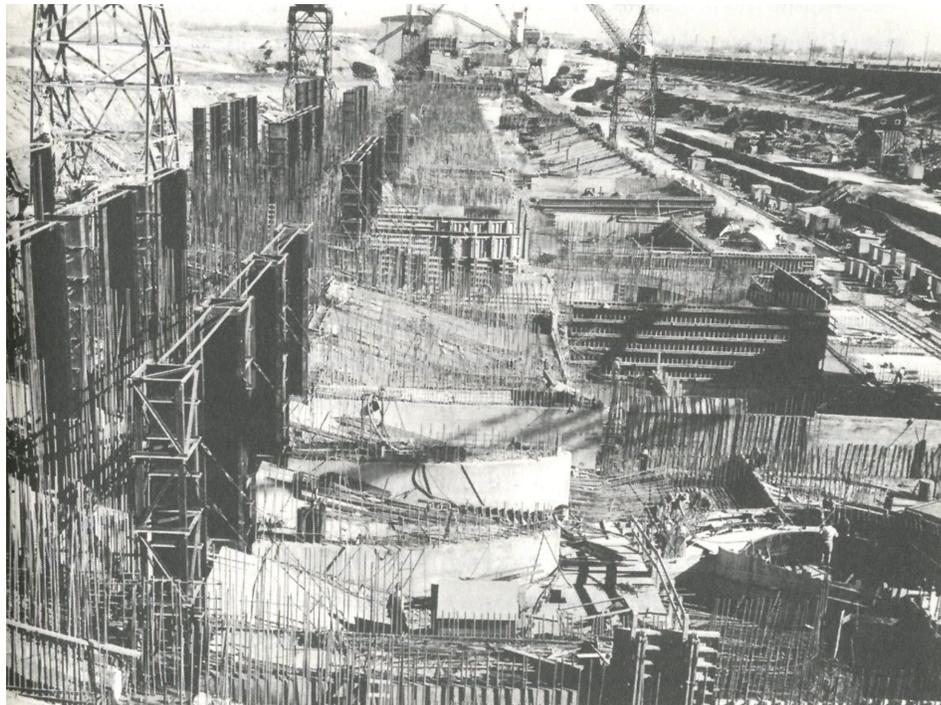
When excavation at the concrete structures' sites hit bedrock – sometimes 50 or 60 feet below the riverbed – the bottom was primed for grouting. Grouting below the structures is important to the dam or lock's structural integrity and long-term performance. Workers positioned drilling rigs at the site of the foundations, and for days on end, drilled a series of holes down 25 to 75 feet into the bedrock. When the holes hit their specified depth, workers forced, under high-pressure, grout – a mixture of cement and water – into the holes and fissures in the rock. As the grout solidified it sealed off the bedrock, ensuring a firmer foundation for the structures atop, and preventing weakening seepage under the dam or lock walls. Altogether the grouters at the Moses-Saunders site forced more than 200,000 bags of cement into the bedrock.<sup>130</sup>

With the foundations grouted, workers began to pour the concrete structures in discrete blocks. The concrete churned in the giant mixing bowls of batch plants constructed adjacent to the sites; from these plants a spigot poured concrete into the buckets of waiting trucks or railcars, which then transported it to a giant gantry crane positioned alongside the work site. The crane lifted the whole bucket from the truck and swung it over the pouring location where workers' hands guided it within a few feet of the specified area. One worker then climbed atop the bucket and released a pneumatic valve that allowed the mixture to fall out onto previously poured blocks and within the wooden or steel forms. Workers then waded through the soft concrete mix with

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<sup>130</sup> “More Grouting to Help Seal of Underground Flow at Barnhart,” *Watertown Daily Times*, April 29, 1957, 13.

compressed air vibrators designed to shake out all the bubbles and spread the mixture evenly over the block. Men hosed completed blocks to prevent cracking, carpenters built forms for the next pour, and ironworkers wired a labyrinth of rebar to reinforce the blocks. They poured the blocks in an alternating system, because the concrete shrunk as it dried and required a second pour. To deal with the complexity of the pouring order at the Big-Mo site, an engineer from Ontario Hydro built a wooden scale model, in which a series of wooden pieces represented discrete concrete pours. The model could be manipulated in an effort to judge which pour should come next – another example of a highly abstracted representation of a complex and often uncertain process.



PASNY photo of concreting and rebar installed to reinforce the structure (October 19, 1956)<sup>131</sup>

Ontario Hydro's wooden model stood in for a concrete reality under construction.

Concrete itself is an abstract term for a non-uniform material. It is a mixture of

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<sup>131</sup> This was photo was taken by Alfred Mellett, PASNY's official photographer for the project. It can be found in Parham, *The St. Lawrence Seaway and Power Project*, 141.

aggregates (sand, gravel, and crushed stone) and a paste made of portland cement and water. The proportions of this mixture varied between the two nations, their respective agencies, and the various contractors. Arnold Shane, a concrete inspector for Ontario Hydro, claimed that the project used at least 50 different mixes for different purposes.<sup>132</sup> On the American side, one of the most significant challenges faced during concreting was a persistent shortage of portland cement due to a nationwide cement workers strike. The shortage led the Corps' concrete division to approve the use of "natural cement" from local sources. Portland cement is typically manufactured by combining chemically specific quantities of crushed limestone, iron-ore, and other chemical additives into a kiln to produce a substance called clinker. The clinker is then ground and combined with small amounts of gypsum and limestone, creating an extremely fine and chemically precise mixture. Natural cement (sometimes called Rosendale cement) is made using a similar process with clay-bearing limestone, but it lacks the chemical specificity of the portland variety. The use of this less rigorously tested cement had serious repercussions. For example, at the site of the Eisenhower Lock, the principal contractor – Morrison-Knudsen – elected to use natural cement in the concrete construction of the Lock's walls. The inconsistency of this cement meant that their concrete pours had only about three-quarters of the cement the specifications called for and it did not properly cure. Under the correct conditions, as concrete dries it rapidly gains strength and continues to slowly gain strength over a long period. However, because the cement did not properly cure before the winter of 1957-1958, it remained susceptible to freeze/thaw damage. Another serious problem encountered at the Eisenhower lock was "honeycombing." This occurs when the mortar (cement) fails to fill the voids between the coarse aggregate particles,

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<sup>132</sup> Quoted in: *Ibid.*, 143.

often transpiring when the concrete has not been properly vibrated, or the mix is made in incorrect proportions. In this case, the inferior cement led to substantial honeycombing, and created a long-term structural issue at the locks that required expensive and frequent repair and eventually an overall rehabilitation program.<sup>133</sup>

Despite setbacks, the pouring continued. As it proceeded, foremen consulted their technical drawings, surveyors sighted their transits (theodolites) to check the structures' angles and level, and engineers deployed "checkers" to take samples of the concrete mix to be lab-tested for strength and durability. The labs cured the samples, subjected them to alternating cycles of freezing and thawing, and subjected them to immense pressure to see how much they could withstand. It is estimated that PASNY alone conducted over 12,000 tests, to ensure the structures would stand the test of time and a range of anticipated environmental stresses.<sup>134</sup> However, as we will see, the concrete's long-term performance in the Wiley-Dondero locks was unsatisfactory.

Extreme environmental conditions confronted the workers on the job, as pouring continued through the winter despite the inhospitable temperatures. Shrouded in heavy-duty parkas, men heated water and sand by steam-pipe, covered new pours in tarps and heated the area around them to 60-70°F to facilitate drying. Drying under these conditions required vast sums of energy. But 24 hours a day, everyday, for nearly three

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<sup>133</sup> See the interviews with Joseph Foley and Kenneth Hallock, both engineers in the Buffalo district office of the Corps, as well as Robert Carpenter an "area engineer" for the Corps in their Massena office, Bill Spriggs, the director of operation at the Eisenhower Lock, and Ambrose Andre, a concrete inspector at the Corps' Massena office: *Ibid.*, 207-211. For the expense of repairs and rehabilitation, amounting to at least \$15 billion, as of 1985, see: United States, Army Corps of Engineers, Buffalo District Office, *Reconnaissance Report for the Major Rehabilitation of the Eisenhower and Snell Locks for the St. Lawrence Seaway Development Corporation* (Washington, DC, GPO, 1985).

<sup>134</sup> Mabee, *The Seaway Story*, 197; for the Corps' concrete testing see: Becker, *From the Atlantic to the Great Lakes*, 62.

years (1955-1958) the work continued.<sup>135</sup> Workers in different colored hardhats, which signified job and rank, swarmed the lines of concrete blocks stacked to varying heights like worker-bees. These workers, the tools they used, and the materials they deployed all formed part of the emergent envirotechnical system, inextricably fusing the natural and technological.

Dam construction, especially Big-Mo, revealed national differences. At the power dam site, Canadians and Americans worked separately on almost identical halves, cooperating to make sure they met in the middle. However, observing the two halves, differences between their construction methods were manifest. For example, the American agencies and contractors preferred to finish all the excavation and grouting work before beginning work on the structure; whereas their Canadian counterparts began pouring concrete in one finished section, while they excavated and grouted another. Americans delivered concrete to site primarily by truck, whereas Canadians used pipes or rails that ran under the gantry crane. During pouring, Americans used steel forms in contrast to the Canadians' wooden forms. Americans typically poured lifts 3-5 feet high (the "lift" is the height of each poured block), but Canadians preferred to pour lifts of 20-25 feet to avoid the time and expense of cleaning and wetting many joints.<sup>136</sup> All of these idiosyncrasies contribute to a particular technological style. However, the most striking difference between the two styles is their seasonal nature. Americans did very little pouring during the three coldest months of winter, because they found the expense of heating the blocks and climatic conditions prohibitive; but the Canadians, undaunted by the frigid temperatures and hoping to reduce winter unemployment, continued pouring at

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<sup>135</sup> For individual accounts including the dates of construction see the interviews in: Parham, *The St. Lawrence Seaway and Power Project*, 43, 137, 144.

<sup>136</sup> See the interview with John Moss, a concrete inspector with Ontario Hydro, in: *Ibid.*, 144.

almost full speed. The migration of American workers from southern locations exacerbated this difference. However, these differences aside, both sides succeeded in raising concrete structures out of the excavation pits, and even successfully made their respective halves connect.

As the pouring neared completion, other workers began to install the operating equipment into the massive structures. At the locks, derricks swung huge steel gates into place, and welders melted them together. At Big-Mo, cranes positioned parts for the installation of the 29-foot turbines and other power producing equipment. Hundreds of electricians installed the necessary wiring, switches, relays, and control room equipment on both ends of the dam. Workers installed ice-melting electric heaters for the gate guides, allowing them to function in freezing temperatures. Trucks continued dumping and compacting excavated glacial till into the 21 miles of dikes. They also dumped riprap – varying sized rocks made of limestone and granite – into the riverbed to prevent scouring and erosion. Everyone rushed and watched for July 1, 1958 – Inundation Day – when workers would blow-up the cofferdams, and the water would rush in behind the dams to form the power pool, known as Lake St. Lawrence.

### *Envirotechnical Challenges*

Of all the challenges faced during the project– administrative, logistical, labor, mechanical, and material – the environment presented most persistent complications. The difficulty working the St. Lawrence soils is thoroughly discussed above, but the difficulty working in the freezing winter climate is hard to overstate, especially for workers and firms from warmer parts of the United States. One contractor noted that the weather conditions “humbled” the Dravo Corporation, a large and experienced lock and

dam builder from Pittsburgh. The Dravo Corporation won the contract to excavate the bypass channel through Long Sault Island and to construct the upstream cofferdam that allowed the Long Sault Control Dam to build in the dry. When overnight temperatures during the winter of 1954-55 plummeted below - 40°F, the company found it difficult to keep their equipment running, and spent whole shifts trying to restart engines. As temperatures dropped, equipment costs soared – parts cracked, chains and cables snapped apart, fuel lines iced up, excavated material froze to trucks' buckets, and metals sometimes crystalized and broke into pieces.<sup>137</sup> Like so many other facets of this project, it is possible that the contractors, especially from warmer climates, saw the cold temperatures at the border as abstract numbers; but when they arrived to work, those abstract ideas became harsh realities that seized their machinery, chilled their employees to the bone, and bit into their profit margins.

Workers fought the cold with warm layers and hot drinks, but sometimes it got the best of them. On December 4, 1956, 175 laborers walked off a worksite on Barnhart Island when the temperature dropped to - 23°F, some suffered from frostbite and refused to potentially lose a finger or limb to meet an impending deadline.<sup>138</sup> These workers literally embodied the cold; it got under their skin and sometimes caused tissue damage.

Frostbite occurred only in the most extreme circumstances, but the cold affected everyone on or near the project. Eunice Barkley and her mother operated a lunch cart at the Long Sault Dam site; she remembered working in - 46°F, serving the workers hot lunches, coffee, and sodas that would freeze as she handed them to the workers. She

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<sup>137</sup> Paraphrased from McConville, "Seaway to Nowhere," 39. Also see the transcription of an interview with Ray Singleton, a gantry crane and heavy equipment operator working on the project, in: Parham, *The St. Lawrence Seaway and Power Project*, 183.

<sup>138</sup> Parham, *The St. Lawrence Seaway and Power Project*, 127.

wore insulated boots, socks, and layers of clothing in the cart, but if she stood still for a couple of minutes her boots would freeze to the floor.<sup>139</sup> A local laborer from Massena claimed to be accustomed to the cold, but remembered standing in a hole during the grouting of Big-Mo, when his boots froze solid in the mud. He had to call for help and got teased about the incident for a long time, but remained grateful that it was only his boots, not his skin. One southerner, a heavy machine operator, recalled working on a particularly cold day when the thermometer hit - 53°F. These severe conditions caused equipment shutdowns that took three days to restart.<sup>140</sup> The already slow pace of excavation nearly stopped when the frost, which went down more than six-feet, made the ground so tough that mechanical shovels broke in half when they attempted to penetrate it. When contractors could not dig or scrape the riverbed with their normal equipment, they resorted to drilling or even dynamite. Another worker, a Canadian piper-fitter working on the Moses-Saunders Dam, remembered having decent clothing to guard against the elements, but also climbing into a cement bucket and starting a fire with scrap wood to keep warm when the cold weather reached extremes.<sup>141</sup> Stories of cold bodies, frozen machinery, and improvised solutions are replete in the historical record, and comprise some of the most striking recollections of workers.

The Seaway's oldest foe – ice – presented its own set of unique challenges. The pages above discuss a number of ice related concerns – planners designed the Long Sault Control Dam to forestall the buildup of frazil ice in Big-Mo's forebay, and Big-Mo's gates required electric heaters to melt ice for year-round operation; the Seaway Authority redesigned South Shore Canal to avoid ice-jams at Montreal; ice compromised the

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<sup>139</sup> Ibid., 186

<sup>140</sup> The first story was told by Ted Catanzarite, a laborer from Massena, see: Ibid., 154, 183.

<sup>141</sup> Ibid., 190.

concreting of the Eisenhower and Snell locks, knocked down pilings during cofferdam construction, destroyed machinery, and, on more than one occasion, claimed the lives of workers in the International Section. In March 1955, 40 acres of sheet-ice backed up behind the completed first half of the Long Sault Dam, delaying cofferdam construction for two weeks. Engineers broke up the ice field by rapidly lowering and opening the Dam's gates creating rapid changes in water level below the surface and causing the ice to fracture and pass downstream. On another occasion, ice backed up behind the dike running south of Montreal and weakened it to the point that when a truck drove over the compromised structure it collapsed, dumping the truck into the frigid water and drowning an engineer.<sup>142</sup>

Despite all the testing, planning, and 60-years of advocacy, workers and engineers often improvised solutions to unexpected or underestimated environmental challenges. Keith Henry, a hydrologist who supervised the building of Ontario Hydro's hydraulic models, acted as Hydro's St. Lawrence river control engineer. During the project, he was tasked with keeping Ontario Hydro's Project Director Gordon Mitchell apprised of the progress of all the individual jobs in the International Section, monitoring river flows over the project's duration, and keeping the contractors on schedule despite changing conditions. Through all this, Henry kept one central consideration always in mind – July 1, 1958. Everything had to be ready for Inundation Day when the floodwaters would be released. On June 29, 1957, his office confronted a seiche – a change in water level or “standing wave” in a bounded body of water, often caused by wind, earthquakes, or a sudden change in barometric pressure – in the International Section. Instigated by a storm, the seiche raised the St. Lawrence's waters above the Iroquois Control Dam and

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<sup>142</sup> Chevrier, *The St. Lawrence Seaway*, 84-85.

threatened to damage downstream worksites. Henry and his team acted quickly, opening the gates of the Iroquois and Long Sault Control Dams to allow the excess water to pass downriver, which resolved the problem within two days. The seiche caused substantial damage to the Wiley-Dondero Canal's banks, which required immediate repair. Henry's retrospective comments are poignant: "This was a reminder to us all that we dealing with a man-made system that did not allow the river to operate the way that nature had intended it."<sup>143</sup>

This is a striking reminder that human and technological impositions fundamentally altered the St. Lawrence's hydrologic regime. Without the concrete structures, ironically meant to regulate the river's flow, the seiche would have been simple increase in streamflow, not an averted catastrophe. This seiche was social, environmental, and technological – an envirotechnical event. It is not wholly environmental nor wholly anthropogenic, but the result of their combination.

### *An Explosive Ending?*

BOOM! On July 1, 1958, an explosion sounded that audibly marked Inundation Day, nicknamed I-Day by local papers. At least 25,000 people turned out to watch the spectacle – demolition experts, using thirty tons of explosives, blew two holes in the central A-2 cofferdam that held back the River's mighty current and cut off the area formerly known as the Long Sault Rapids from the River's flow. As a safety precaution, police evacuated local residents within a two-mile radius of the blast site, and tried to manage the flow of traffic and spectators.

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<sup>143</sup> Keith Henry later became an IJC commissioner (1972-1978), this story is taken from an interview with Henry reproduced in: Parham, *The St. Lawrence Seaway and Power Project*, 179-180.

The sound came as a relief to the construction agencies, which met their accelerated deadline; but the sound was bittersweet for local residents, many of whom lost their homes, their livelihoods, and had their social and physical worlds rearranged. Their stories are discussed in the following chapter. With the gates on the Long Sault and Moses-Saunders dams closed, and the cofferdam opened, the St. Lawrence's waters rushed in, flooding more than 38,000 acres over a stretch extending nearly forty miles upstream. Along the riverside, the workers planted the spoil with trees and created an extensive park system on both sides of the border. Following the detonation, it took two and a half days to flood the area between the Iroquois and Big-Mo dams.<sup>144</sup>

With the inundation, Ontario Hydro and PAsNY's role neared an end. Both power agencies stayed within their budgets of about \$300 million each. In contrast, the navigation agencies vastly exceeded their initial estimates; the Seaway Authority's construction outlay rose 84 percent to \$300 million and the Seaway Development Corporation's expenditures increased 85 percent to \$124 million.<sup>145</sup> The navigation agencies expected to recover their expended capital through tolls implemented along the Seaway, and the power agencies would recover their investment by harnessing and distributing of the St. Lawrence's hydroelectric power potential. On July 8, 1958, the first Canadian generator came online, and on July 17<sup>th</sup> the first American generator joined

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<sup>144</sup> "2,700-acre Recreational Park Planned for Project," *Potsdam Courier-Freeman*, December 16, 1954, 1; "St. Lawrence State Park Taking Shape," 42, "Thirty Ton Blast Marks New Era in Seaway Valley," 3, and "Nine Major Parks Will be Created in Seaway Valley," 35, in "Inundation Edition: A Historical Issue Tracing the Conception and Progress of the Giant Project," *Cornwall Daily Standard-Freeholder*, June 28, 1958, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76A, "Canadian Newspapers." It should be noted that although the flooding extended nearly forty-miles upstream, the area substantially flooded, extended about 28 miles.

<sup>145</sup> "How U.S. Spends \$140 Million Share," *Chicago Daily News*, June 26, 1958, B6, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76A; "Seaway Costs Near Billion," *Cornwall Daily Standard-Freeholder*, June 29, 1957, 36, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76A, "Canadian Newspapers;" St. Lawrence Seaway Development Corporation. *Annual Report... for 1958*, 43-45, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 80, "Seaway Development Corporation;" and Mabee, *The Seaway Story*, 203.

it in operation. By mid-December 1959, all of Big-Mo's thirty-two turbine-generators worked to produce power.<sup>146</sup>

The blast effectively marked the end of the Army Corps of Engineers' official role in the project. With construction on the canal completed, their position as the primary agent for the Development Corporation drew to a close. In the International Section, they oversaw outstanding dredging contracts around the Massena dike, which came to completion by the end of 1959. However, outside the strict geographic delimitation of the project, the Corps' involvement with the Seaway continued. They dredged the channels between the upper Lakes to a corresponding 27-foot depth, completed by 1962, and continue to maintain a presence in Seaway politics and structural rehabilitation.<sup>147</sup>

Joe Dumas, the son of a local reporter, Eleanor Dumas of the *Watertown Daily Times* assigned to cover the project, remembered standing next to Robert Moses atop Big-Mo on Inundation Day. When the explosion rang out, he saw a plume of smoke extend 50 feet into the air, but when nothing else appeared to happen, he turned to Moses and asked: "Is that all there is?"<sup>148</sup> Similarly, Keith Henry stated: "The blast was pretty awesome, but since it was three miles away, the appearance was not what we expected... It was not exactly the awesome flood which we had all envisioned."<sup>149</sup> Lionel Chevrier also attended the Inundation Day ceremonies, and remarked: "The explosion and flooding were perhaps an anticlimax to the 20,000 people who lined the embankments nearby, but

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<sup>146</sup> The timeline of generators being put into production by Ontario Hydro can be found at: "R.H. Saunders Station," *Ontario Power Generation Website*, accessed January 16, 2014, [http://www.opg.com/power/hydro/ottawa\\_st\\_lawrence/rh\\_saunders.asp](http://www.opg.com/power/hydro/ottawa_st_lawrence/rh_saunders.asp).

<sup>147</sup> For more on these channel enlargements and the estimated cost of \$136 million, see: Willoughby, *The St. Lawrence Waterway*, 270-272. For the Corps limited role after July 1958, see: Becker, *From the Atlantic to the Great Lakes*, 107.

<sup>148</sup> Joe Dumas recounted this story in: Parham, *The St. Lawrence Seaway and Power Project*, 319-320.

<sup>149</sup> *Ibid.*, 321.

for the Hydro men it was the biggest moment in the commission's history. The power-house, a push-button marvel that is connected to many points upriver by telephone, radio-telephone and by various automatic telemetering devices, is even equipped with a picture theatre (for showing educational films), and observation lounges. I was chatting with Dr. Holden [Ontario Hydro's chief engineer] after the opening and he said he had never seen a power-house like it anywhere else in the world."<sup>150</sup> Chevrier's description of the power site's technological features may seem quaint to modern readers, and the denouement of the blast may have disappointed some onlookers, but Chevrier's comments illustrate the sense of unbridled techno-enthusiasm that often accompanied the project.

Portions of this chapter focused on the logistical and administrative difficulties of constructing a transboundary envirotechnical system. However, all things considered, the level of bi-national cooperation on the brick and mortar scale is impressive. For example, Canadians built the substructure of the Cornwall-Massena Bridge while Americans built the superstructure. Canadians and Americans dredged on both sides of the border, dug channels through each other's territory, and dumped excavated material across the boundary. Workers passed freely between both sides of the project without customs agents impeding their movement. For a time, the border seemed fluid in more ways than one; Canadian and American soils became simply St. Lawrence soils to be excavated in service of a mutual goal. Abstract political lines became blurry in the complex reality on the ground at the project.

The Seaway began "soft" operation on April 25, 1959, when the icebreaker *Frontenac* passed through the St. Lambert lock. Appropriately named after Louis de

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<sup>150</sup> Chevrier claimed 20,000 people attended I-Day, but local papers said 25,000. Chevrier, *The St. Lawrence Seaway*, 98.

Buade de Frontenac, the 17<sup>th</sup> century expansionist minded Governor of New France.<sup>151</sup>

The *Frontenac*'s April voyage marked the opening of the Seaway's first season of navigation; however, the Seaway's formal inauguration awaited the arrival of Her Majesty Queen Elizabeth the Second, in June.

On June 26, 1959, just shy of six years after St. Laurent's declaration that the Seaway project represented a "bond rather than a barrier between Americans and Canadians," Queen Elizabeth II and Dwight D. Eisenhower, aboard the Royal Yacht *Britannia*, sailed through the St. Lambert Lock that bypassed the Lachine Rapids, and formally opened the Seaway system.<sup>152</sup> At the opening ceremonies, the President and Queen each reiterated the sentiment expressed by St. Laurent at the project's outset. The Queen straightforwardly captured the project's historical and bi-national significance, as well as its scale and economic possibility:

"Men have dreamed and worked for two and a half centuries to make this river navigable, and now, at last, it is a reality. This waterway will carry ocean shipping from tidewater to the very heart of the continent, a distance of more than 2,000 miles. It will affect the lives of many generations of our peoples, and it is bound to exercise a profound influence on the maritime trading nations of the world. The two nations built it together, and the two nations will share its benefits."<sup>153</sup>

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<sup>151</sup> Frontenac was Governor of New France between 1672-1682 and 1689-1698. He aggressively expanded the fur trade along the St. Lawrence and Great Lakes, establishing Fort Frontenac at Cataraqui (Kingston, Ontario) and substantially extending France's imperial reach into the heart of the continent.

<sup>152</sup> The details of Queen and Eisenhower's tour was widely reported, for example: "Thousands to see Queen Elizabeth, President Eisenhower Open Seaway," *Massena Observer*, June 25, 1959, 1; and "Touring with Queen Elizabeth," "Seaway Dedication Edition," *Watertown Daily Times*, June 23, 1959, 7; W.A. Wilson, "The Queen, the Dream, and the Reality," *The Montreal Star*, June 27, 1959, 1, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers;" "From St. John's to Toronto... The Picture Story of a Glittering Royal Tour," *The Globe and Mail*, July 1, 1959, Pictorial, 20pgs." SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers;" Betty Lee, "The Way to the Sea," *The Globe Magazine*, July 18, 1959. SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers."

<sup>153</sup> Taken from Queen Elizabeth II's remarks at the Seaway opening ceremonies. "The St. Lawrence Seaway: Ten Years Later," Broadcast June 26, 1969, *CBC Digital Archives*, October 1, 2013, <http://www.cbc.ca/archives/categories/economy-business/transport/the-st-lawrence-seaway-gateway-to-the-world/the-st-lawrence-seaway-ten-years-later.html> <Accessed January 13, 2014>.

Eisenhower's remarks thoroughly echoed St. Laurent's, and captured the broader discourses of transboundary cooperation and technological triumphalism:

*Je suis tres heureux de me retrouver parmi vous au Canada où, il y a un an, j'ai fais un si agréable séjour...* This waterway, linking the oceans of the world with the Great Lakes of our American continent, is the culmination of the dreams of thousands of individuals on both sides of our common Canadian-United States border. It is the latest event in a long history of peaceful parallel progress by our two peoples.

Side by side we have grown up together. Long ago we found solutions for many of the problems characteristic of pioneering peoples. We have built nations out of vast stretches of virgin territory and transformed a wilderness into one of the most productive areas on earth...

The parade of ships already passing through the Seaway on their way to and from the heart of the continent strikingly demonstrates the economic value of this new channel. But the Seaway is far more than a technical and commercial triumph. It has more significance than could just the successful construction of this notable aid to commerce and navigation. It is, above all, a magnificent symbol to the entire world of the achievement possible by two democratic nations peacefully working together for the common good."<sup>154</sup>

Eisenhower's use of the terms "virgin territory" and "wilderness" are indicative of a particular vision of the New World prior to the transformative efforts of European settlers, as untouched and culturally empty space. This vision is contested by the presence of First Nations peoples, who saw the space as populated and culturally full. Native American interaction with the Seaway project is discussed in pages that follow. Eisenhower claimed the Seaway as a symbol of peace and progress, and exploited its cultural capital in a larger discursive battle for those values with the communist world.

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<sup>154</sup> Eisenhower's French loosely translates to – "I'm very happy to be here with you in Canada where, a year ago, I had such a pleasant stay." Dwight D. Eisenhower, *Public Papers of the Presidents of the United States, Dwight D. Eisenhower, 1959, Containing the Public Messages, Speeches, and Statements of the President of the United States released by the White House from January 1 to December 31, 1959* (Washington: General Services Administration, National Archives and Records Service, Office of the Federal Register, 1960), 479-480.

Amidst a great deal of royal fanfare, the Seaway opened for business. Its waters had been deepened to accommodate ships with a draft of 27 feet, and Big-Mo's turbines turned out an upward potential of 1.8 million kilowatts of electricity. The abstract dreams of advocates over the previous 62-years had become concrete realities. Like his advocacy predecessor, Charles P. Craig, Julius Barnes did not live to see the Seaway's completion. Before his passing, like others from the Seaway movement, Barnes broke with Danielian over the tolls issue and handling of the Great Lakes-St. Lawrence Association, placing Barnes on the outside of the movement's remnants. He received honors in Duluth for his role in the Seaway saga, and his old friend and protégé Lewis Castle invited him to the Inundation Day ceremonies, but Barnes felt too old and unhealthy to travel. On April 17, 1959, just eight days before the *Frontenac* passed through the St. Lambert lock, and only 16 days before the first salt-bottomed ship, the *Ramon de Larrinago* docked in Duluth in May, Julius Barnes never awoke from a nap at his Duluth residence.<sup>155</sup>

The Seaway silently stands as a monument to the dreams and endeavors of multiple generations of advocates like Barnes, Craig, Allen, Keefer, Fleming, Detweiler, Flowers, Howland, Thompson, Lind, Denison, and Merritt. They discursively constructed it long before its physical realization. Beginning in the late 19<sup>th</sup> century, they appropriated the discourses of conservation and bi-national cooperation and imbued the project with these values, which it continues to espouse. However, their names are no longer explicitly associated with the project. Instead, the names of enabling politicians

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<sup>155</sup> "Julius H. Barnes Dedicated His Life to Seaway Project," *Duluth News-Tribune*, July 5, 1959, 14, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76-A; "Interviews with Miss Linden, Secretary to Lewis Castle, September 18, 1958, and with Emery Henshell, Director, Duluth Industrial Bureau, Duluth, October 29, 1959," SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 3, "Field Notes for the Seaway Story."

and bureaucrats are memorialized in its structures – the Wiley-Dondero Canal with its Eisenhower and Snell Locks, as well as the Moses-Saunders Power Dam with its R.H. Saunders and Franklin D. Roosevelt Generating Stations.<sup>156</sup> A dynamic movement and idea, Seaway advocates often reconfigured their arguments and objectives, and engaged a diverse set of powerful institutions, individuals, and discourses to their cause.

Advocates' names are mostly forgotten, but they helped build the envirotechnical regime that sustained the Seaway system.

The Seaway is also a monument to transnational, but historically and culturally contingent high-modernism – a megaproject in scope, cost, and transformative power. Its planners fell into many of the traps associated with high-modernist thinking. In their effort to “improve” the St. Lawrence they abstracted the river’s value, uses, and even the features of its physical environment. To paraphrase James C. Scott, Seaway planners saw the river like a state; they abstracted it to a highway for river-borne commerce and a site of power production. The spaces they simultaneously designed for recreation, are largely incidental to the project itself, and serve as a buffer between local communities and the river. Thus, they made the river legible for particular ends and by emphasizing certain uses and visions of the river, marginalized others. Alternative, local visions and interactions with Seaway project, as well as the residual and recursive transformations it

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<sup>156</sup> The other figures have been discussed at length, but the Snell Lock is named after Congressman Bertrand H. Snell, the Republican representative for New York’s 31<sup>st</sup> District between 1913 and 1939. His district, at the time, included Clinton, Essex, Franklin, and St. Lawrence counties (the latter includes Massena and Ogdensburg, NY). Snell was a longtime political advocate for the Seaway idea, and introduced a number of bills to make the River more navigable. However, his ties to private power interests and limited success made the choice to name the lock after him controversial. Although Snell claimed to have been the first to propose the joint power and navigation project on the St. Lawrence in Congress, this is demonstrably incorrect. See: “Interviews with E.B. Crosby, Massena, September 18, 1958; Thomas Fay, Postmaster, Massena, September 15, 1958; and George S. Reed, Trustee of PASNY, 1934-1950, Lowville, NY, July 18, 1959,” SLU, *Seaway Collection*, Mabee Series, Box 52, Folder 3, “Field Notes for the Seaway Story.”

wrought are discussed in the following chapter. The Seaway's story doesn't end with its structural completion and formal opening. Its transformative power continued, transforming adjacent communities and regional ecology. St. Laurent claimed that the Seaway engendered new bonds – between nations, agencies, communities, and certain individuals. However, it simultaneously erected new barriers. Physical barriers in the case of concrete dams, and less tactile ones – social and cultural barriers to alternative visions of the river's purpose, utility, and value. The process of abstraction is always accompanied by a loss of resolution; making the landscape legible requires a simplified vision. The following chapter narrows the field of vision and increases analytical resolution, by looking at the social and spatial reconfigurations of adjacent riverine communities that accompanied the project. As workers and planners built a new envirotechnical system, they subsumed local practices, embodied spaces and histories that seemed out of tempo. To some, the Seaway represented the “eighth wonder of the world” – the envirotechnical sublime, a linkage to world commerce, and a bond between nations. For others, it meant the loss of the spaces they loved and people they had been – a reconfiguration of space and identity. In short, it was bond as well as a barrier.

## Chapter 7

### Après Nous, Le Déluge

“When you start separating the people from their rivers what have you got?  
‘Bureaucracy!’”

– William S. Burroughs<sup>1</sup>

Inundation Day – July 1, 1958 – marked the denouement of a multi-decadal, bi-national political struggle to construct the Great Lakes-St. Lawrence Seaway system. It also marked an explosive *coup de grâce* for a series of local communities and river users. Most of this project’s analytical foci are directed toward the bi-national scale – the construction of a transnational envirotechnical system and the regime that sustains it. However, the following pages shift analytical scale to focus on local domains and their interaction with bi-national concerns. Here, I tell a story about local priorities confronting bi-national ones, and illuminate disconnects between local uses/social needs and the nebulous but pervasive idea of progress through technological intervention, which is central to the envirotechnical regime undergirding the Seaway. The St. Lawrence Seaway provided a nexus of scales – where competing priorities and practices clashed, the old confronted the new, the local encountered the transnational, and the politically weak capitulated, in varying degrees, to the desires and designs of the powerful.

At the heart of this story are several communities adjacent to the river. The most notable are the eight “Lost Villages” along Ontario’s side of the International Rapids Section – Iroquois, Morrisburg, Aultsville, Farran’s Point, Dickinson’s Landing, Wales, Moulinette, and Mille Roches. After the floods, only two of these villages – Iroquois and Morrisburg – retained their names and the latter held onto a small portion of its townsite.

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<sup>1</sup> This quote is attributed to Burroughs, but is found in: Jack Kerouac, *On the Road: The Original Scroll* (New York: Penguin, 2007), 249.

Planners reorganized and combined the other six villages into two new towns – Ingleside (Aultsville, Farran’s Point, Dickinson’s Landing, and Wales) and Long Sault (Moulinette and Mille Roches). For the most part, the inundation’s impacts were less socially and physically severe on the American side. Across the river, Waddington, NY was the most affected village. This chapter will also explore the Seaway authorities’ interaction with two First Nations communities. The St. Regis/Akwesasne Reservation, home to Mohawk peoples, members of the Six Nations of the Iroquois Confederacy, it straddles the borders between the United States and Canada, as well as Ontario and Quebec. The appropriation of Native lands on Cornwall and Barnhart Islands brought them into conflict with Seaway plans. The Caughnawaga (now Kahnawake) Reservation, also inhabited by Mohawk peoples, is located on the south shore of the St. Lawrence across from Montreal and the Lachine Rapids. To bypass the Rapids, the Seaway Authority appropriated about 1,300 acres of the Reservation, putting the interests of its inhabitants at odds with Seaway plans.

Focusing on these specific communities allows me to connect the transnational ambitions of Seaway planners with concerns in local domains. This chapter offers a description of the “Lost Villages” before the Seaway, illustrating their daily patterns of life and spatial practices. It explores how people embodied the spaces in which they lived, and how they produced and evinced local, tactile knowledge of the river and landscape. The expropriation process manifested a gross power imbalance between local communities and transnational objectives. This chapter will explore the process of land acquisition for the Seaway, how certain individuals deployed “subaltern forms of resistance” as well as legal mechanisms to defend their interests against the bureaucratic

taking of the property.<sup>2</sup> This section further highlights the activities of First Nations peoples facing territorial losses in the name of bi-national progress, and compares the expropriation process across communities and appropriating agencies. I then discuss competing plans and visions for remaking these communities. Once locals acceded to the demands of Seaway planners, I explore how much agency or input they had in the process of constructing their new communities. The re-planning process gave precedence to certain values over others, and the reconstituted communities evince a certain conception of modernity that eschewed the communities' traditional spatial organization and social patterns.

The actual physical transformation and relocation of the villages will be discussed at length. The process of moving about 9,100 people, over 550 buildings, as well as other basic infrastructure and cultural artifacts was a logistical and technological feat. However, the destructive side of this physical transformation is equally impressive. Workers removed or destroyed countless buildings, infrastructure, and biota to make way for the Seaway's waters. Relocated to their new communities, locals had varying reactions to the turbulent experience. A pervasive sense of loss underscored these responses, and adapting to life in the new communities was not an easy transition. Planners built the new towns in the progressive, high-modern image of the project they abutted, and to many they seemed as cold and callous as the concrete dams imposed on *their* river. How local residents internalized these external transformations and adapted to changing modes of living will round out the chapter.

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<sup>2</sup> Developed in an earlier work on Peasants in Malaysia, James C. Scott discusses the notion of "subaltern power" at length in: James C. Scott, *Weapons of the Weak: Everyday Forms of Peasant Resistance* (New Haven: Yale University Press, 1987); and James C. Scott, *Domination and the Arts of Resistance: Hidden Transcripts* (New Have: Yale University Press, 1992).

Joy Parr's excellent but brief study of the transformation of Iroquois provides a touchstone for this chapter.<sup>3</sup> Parr's analysis focuses on how the people of Iroquois embodied the space they lived in, what she calls their "sensuous histories." Analogous to Pierre Bourdieu's concept of "habitus" – values and dispositions that are thoroughly embodied and acquired in dialectic response to external conditions (fields)<sup>4</sup> – Parr's sensuous history describes Iroquoians' spatial practices of daily life and the habits through which they embodied that space. The Seaway project fundamentally undermined these patterns and practices and left residents without the physical and psychological benchmarks, through which they made sense of themselves and their surroundings. Being careful to not simply recapitulate Parr's work, this chapter will incorporate her insights, extend them geographically and temporally, and put them in context of the broader Seaway project.

Another line of Parr's inquiry traces Iroquois' relocation through the prism of post-war "megaprojects." Like the foregoing chapter, this one will also focus on the inundation and relocation as byproducts of a high-modern ethos exhibited by Seaway planners. Recall Tina Loo's assertion that the construction of hydroelectric facilities and concomitant relocation of peoples in their way is the "most prominent manifestation of the high-modernist impulse" in its Canadian context.<sup>5</sup> The Seaway is a superlative example of transnational high-modernism along the Canadian-American boundary; and its attendant processes of dispossession – albeit through legal mechanisms – allows us to situate the project in a specific discursive and ideological context, as cautioned by James

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<sup>3</sup> Parr's analysis of Iroquois is comprised of a single chapter (Chapter 4 "A Walking Village Remade: Iroquois and the St. Lawrence Seaway") in: Parr, *Sensing Changes*, 79-101.

<sup>4</sup> Pierre Bourdieu, *Language and Symbolic Power* (Cambridge, MA: Harvard University Press, 1991).

<sup>5</sup> Tina Loo, "People in the Way: Modernity, Environment, and Society on the Arrow Lakes," *BC Studies*, 142/143 (Summer/Autumn 2004), 165.

Murton.<sup>6</sup> This is not the high-modernism of the Soviet Union – although some local residents would have begged to differ, and repeatedly referred to land acquisition agents as “Russians.”<sup>7</sup> The high-modern impulse transcended national and ideological boundaries, but its proponents adapted it to specific contexts. Its more invasive characteristics may have been tempered in this Canadian-American iteration, which provided prior consultation and due process, but for many locals, dispossession by any other name or mechanism was still dispossession.

The previous chapter also described how planners’ abstracted view of the environment proved incongruent with the complex and messy reality of the river. Similarly, their plans for adjacent communities sought to simplify and make legible a complex matrix of social needs, interactions, and desires. However, by marginalizing certain values and dictating perceived social requirements to the communities of the Seaway Valley, the planners inflicted a form of what Bourdieu called “symbolic violence.” In short, symbolic violence is the tacit submission of the dominated to the very structures of domination, the naturalization and internalization of a social order that privileges certain activities and values over others.<sup>8</sup> By circumscribing the river’s uses

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<sup>6</sup> James Murton, “Creating Order: the Liberals, the Landowners, and the Draining of Sumas Lake, British Columbia,” *Environmental History*, Vol.13, No.1 (January 2008), 96.

<sup>7</sup> Several examples of this moniker will follow, but examples can be found in: “Interviews with Mr. and Mrs. Simser, near the Massena Canal, August 1956; Walter F. Wilson, Louisville, August 27, 1956; Daniel Conglas (?), head of the Landowners Association, Louisville, March 21, 1957; Thomas Fay, Postmaster, Massena, September 15, 1958,” SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 3, “Field Notes for the Seaway Story.”

<sup>8</sup> Bourdieu defined symbolic violence as a “gentle violence, imperceptible and invisible even to its victims,” exercised through the “submission of the dominated to the structures of a social order of which their mental structures are a product.” Pierre Bourdieu, *Masculine Domination*, Richard Nice, trans., (Stanford, CA: Stanford University Press, 2001), 1; Pierre Bourdieu, “Rethinking the State: Genesis and Structure of the Bureaucratic Field,” *Sociological Theory*, Vol.12, No.1 (1994), 14. Also see: Pierre Bourdieu, *Pascalian Meditations*, Richard Nice, trans., (Stanford: Stanford University Press, 2000), 170. Bourdieu defined the state in Weberian terms of “the monopoly of the legitimate use of physical and symbolic violence over a definite territory.” By doing so, he explicitly references Weber’s idea that the

and normalizing certain interactions or modes of behavior, the envirotechnical regime engaged in a form of symbolic violence. When some residents dissented and transgressed this “natural” order – by refusing to move or demanding concessions – they enacted subaltern forms of resistance.<sup>9</sup> In the Seaway story, the violence transitioned from a symbolic to a physical manifestation, exerted in the destruction of local communities’ social and physical spaces.

The Seaway engendered a new envirotechnical order, in which the locals’ habitus – their embodied sense of self and daily spatial practices– was out of step. In retrospect, their interactions with Seaway authorities and the process of being dispossessed of lands and their patterns of daily-life make the quote at the chapter’s outset from William S. Burroughs poignant. The bi-national order and state(s) separated them from their river and they confronted bureaucracy at every turn. Some of their stories are explored below.

### *Before the Flood*

Like all maps, the one presented below conveys an abstracted view of the landscape it depicts. In fact, experts in informational design deliberately encourage maximum abstraction to convey only the most relevant data.<sup>10</sup> The map below shows the communities’ locations before and after the flood, the original and relocated highways

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state has a monopoly on violence or “legitimate force.” Pierre Bourdieu, *Practical Reason: On the Theory of Action* (Stanford: Stanford University Press, 1998), 40.

<sup>9</sup> An excellent example of subaltern resistance and the imposition of certain values under the rubric of Progressive conservation can be found in Karl Jacoby’s work on the “hidden histories” of conservation in the context of state and national parks in the United States. See: Jacoby, *Crimes Against Nature*.

<sup>10</sup> Other, non-informative or information-obscuring elements are pejoratively called “chartjunk,” a concept analogous to Austrian architect, Adolf Loos’s self-consciously modernist claim that ornament is a crime. Abstraction and simplification by definition preclude detail – resolution is lost with increased scale. See: Edward Tufte coined the term “chartjunk” in: Edward Tufte, *The Visual Display of Quantitative Information* (Cheshire, CT: Graphics Press, 1983), 107. I am actually paraphrasing Loos’s essay originally written in 1908, but reproduced several times. It may be called a modernist manifesto for architecture. See: Adolf Loos, “Ornament and Crime (1929)” *Ornament and Crime: Selected Essays*, Adolf Opel, ed., Michael Mitchell, trans., (Riverside, CA: Ariadne Press, 1997), 167-176.



native settlements in 1780s.<sup>12</sup> Loyalist soldiers – from the disbanded Royal Regiment of New York – founded several communities in Osnabrock Township. For example, they founded Aultsville – originally named Charlesville – in 1787, and Dickinson’s Landing – called the Eastern District of Lunenburg – around 1783-84.<sup>13</sup> The British crown awarded other spaces as land grants for military services rendered. The crown gave Farran’s Point to Jacob Farrand and Wales to Dr. James Stuart, both officers in the Royal Regiment of New York. With successive generations, these settlements slowly developed into villages. Iroquois, named for the Native Americans who camped on the wooded area jutting out into the river, served as a pioneer village when Loyalist settlers pressed inward toward Lake Ontario during the last decades of the 18<sup>th</sup> century. Other villages – Mille Roches and Moulinette – trace their origins to the early 19<sup>th</sup> century when Loyalist settlers exploited the river’s potential to produce hydropower for mill sites. Morrisburg – originally West Williamsburg – was established in the mid-19<sup>th</sup> century, spurred by the construction of the Williamsburg Canals between 1844 and 1856. Midcentury canal construction and the concomitant migration of canal workers, materials, and capital to the area catalyzed regional growth. Many communities served as way stations for marine traffic traversing the canals, although the portage at Dickinson’s Landing suffered from their construction. Over the first half of the 19<sup>th</sup> century, Dickinson’s Landing prospered from the river’s impassibility. Boats could shoot the rapids above the Long Sault, but the water’s intensity at the Long Sault Rapids necessitated the twelve-mile portage between

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<sup>12</sup> I say “legend” because I can find no sources to verify this claim. In keeping with their mission, the Lost Villages Historical Society provides excellent description of the villages’ histories before the inundation. However, I have taken pains to avoid the romanticism present, in varying degrees, in their descriptions. See: “Our History: The Lost Villages,” *Lost Villages Historical Society Website*, accessed January 27, 2014, <http://lostvillages.ca/history/the-lost-villages>.

<sup>13</sup> Loyalist Soldiers similarly settled the hamlet of Maple Grove in 1784. Ibid.

Dickinson's Landing and Cornwall. With the portage business, the community proliferated. By 1832, it had a gristmill and sawmill, a distillery, a soap factory, a tannery, two blacksmiths, a carriage factory, a cabinet-maker, three shoe shops, two harness shops, two tailors, an undertaker, a cooper and tinsmith, five general stores, and five hotels.<sup>14</sup> Two years later, in 1834, the commencement of construction of the Cornwall Canal initially expanded the village, but also sowed the seeds of its decline as an important nexus along the St. Lawrence route.

In general, the fortunes of these communities rose and fell with their adjacent canals. Canal and waterpower sites engendered productive but also transient spaces, which sustained adjacent communities and structured their economic lives and social patterns. Old Highway 2, known as the King's Highway, meandered along the riverside and bisected the villages, bringing traffic – first stagecoach, followed by the automobile – passing between Montreal and Toronto into the heart of these communities. The placement of Grand Trunk Railway stations in Aultsville, Farran's Point, Wales, Moulinette, and Mille Roches further underscored the communities' identity as way stations. For travelers, they were places to pass through, not places to be. As the range of hydroelectric power transmission and transportation increased, the need for productive sites and stopping points along the St. Lawrence diminished. Ronald Stagg noted that these new technologies rendered the St. Lawrence Valley as a group of "rural communities, largely frozen in an earlier time."<sup>15</sup> This characterization of stagnant communities pervades most descriptions of the Seaway Valley throughout the first half of the 20<sup>th</sup> century.

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<sup>14</sup> This list is taken from the Long Sault tab on: Ibid.

<sup>15</sup> Stagg, *The Golden Dream*, 181.

The Alcoa proposal in 1907 ideologically divided the region and impeded local development. Alcoa's plans provoked formal objections from Morrisburg, Iroquois and Williamsburg Township, who protested the attendant loss of property and disappearance of the Long Sault Rapids. On the other hand, Cornwall and Brockville had been seduced by the prospect of cheap power and industrial migration, and since their lands would mostly remain dry, they pressed for the approval of Alcoa's petition. The Seaway project resurrected this divide a half-century later, and the protracted Seaway debate kept these communities in flux during the intervening period. The specter of the Seaway and accompanying deluge left the villages' with an uncertain future, never knowing if or when they would have to move out of its way under the auspices of bi-national progress.

While the Alcoa proposal failed to secure state approval, the Seaway agenda persistently threatened the livelihood of these villages, and necessitated contingency plan drafts. For example, Norman D. Wilson, the transportation engineer responsible for planning Toronto's subway system, authored a report in 1943, entitled: "Factors in the Rehabilitation of "Seaway Communities Partially or Wholly Inundated in the Development for Power and Navigation of the International Section of the St. Lawrence River."<sup>16</sup> At the outset of his report, Wilson acknowledged the economic stagnation of the region, and proposed alternatives to maintain and augment economic activity in the post-inundation, "rehabilitated" villages, but his conclusions are halting and uncertain of the project's ability to engender substantive economic change.<sup>17</sup>

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<sup>16</sup> Norman D. Wilson, "Factors in the Rehabilitation of Seaway Communities Partially or Wholly Inundated in the Development for Power and Navigation of the International Section of the St. Lawrence River," 1943, 57 pages, SLU, *Seaway Collection*, Collection No. 40, Mabee Series, Box 71, Folder 5, "Factors in the Rehabilitation."

<sup>17</sup> *Ibid.*, 2.

Joy Parr's description of Iroquois along with the University of Western Ontario's *Megaprojects New Media* website provide the most detailed and vivid depiction of a pre-Seaway "lost village." Unlike the foregoing narrative of economic stagnation, they describe socially dynamic spaces and interactive experiences among villagers and with the river. The geography of these spaces is central to how they are experienced; their spatial arrangements inform social behavior. The villages and villagers were inextricably linked to the river. As Parr notes: "Their bodies were familiars of the river, their senses of self dependent upon time-worn knowledge of the St. Lawrence and its ways."<sup>18</sup> The river was the inhabitants' scenery, an omnipresent actor in the villages' histories, as well as the force that moved their economies and structured their lives.

Locals often described the river like family: "I loved the water... loved to see other people out enjoying themselves... I just loved the river."<sup>19</sup> Following Bruno Latour, we might say that locals shifted the bracket between nature and culture, to count the river as cultural kin.<sup>20</sup> The river provided the aural ambience that underscored their lives. One resident remarked: "Normally the river was fairly quiet, but you knew it was there."<sup>21</sup> Typically, the sound of the river provided a muted but comforting soundscape, but on occasion, it served as an audible signal of changing barometric pressure. Les Cruickshank, a young local contractor, recalled these occasions when: "You could hear it slapping up against the banks, rough days when it was windy." Joy Parr claims that the

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<sup>18</sup> Parr, *Sensing Changes*, 87.

<sup>19</sup> Taken from a transcript of an interview conducted with Shirley Fisher of Iroquois on April 4, 2000. See: *Ibid.*, 87, 220 (Fn46).

<sup>20</sup> Bruno Latour, *We Have Never Been Modern* (Cambridge, MA: Harvard University Press, 1993), 101. Also see: Parr, *Sensing Changes*, 89.

<sup>21</sup> Taken from a transcript of an interview conducted with Shirley Kirby Carnegie of Iroquois on March 17, 2000. See: Parr, *Sensing Changes*, 87, 220 (Fn48).

sound of the river was the villages' background "keynote" had deep and pervasive influence on the behavior and moods of those who lived with it.<sup>22</sup>

River geography also played a central role in the physical organization of the villages. The villages grew up organically along the river's banks, and the St. Lawrence remained central to their layout, providing immediate, unimpeded access to the water. The villages were small. Iroquois, the second largest of them, was twelve blocks long and two blocks wide, and had a 1951 population of 1,086.<sup>23</sup> By contrast, Farran's Point was only four blocks wide and three blocks long, and had a population of "150 people to 200 maximum." One former resident described Farran's Point as a place where, "you'd blink and you'd miss it... but it was a nice friendly little town, we were just like family."<sup>24</sup>



Dickenson's Landing, ON – Overlay with Aerial Photograph and Historical Atlas<sup>25</sup>

<sup>22</sup> Ibid., 87-88

<sup>23</sup> Canada, Dominion Bureau of Statistics, *Ninth Census of Canada, 1951*, Vol.1, Table 6, (Ottawa: E. Cloutier, 1953).

<sup>24</sup> Interviews with Vale Brownell and Robert Bedingfield, formerly of Farran's Point: *The Lost Villages: Upper Canada's Heritage Beneath the Waves Website*, Tony Atherton, ed., accessed January 27, 2014, <http://www2.canada.com/ottawacitizen/features/lostvillages/index.html>.

<sup>25</sup> Overlay done by author. The map was taken from: "Dickenson's Landing, Illustrated Historical Atlas of the Counties of Stormont, Dundas, and Glengarry, Ontario (Toronto: Belden & Co, 1879)," *The Canadian County Atlas Digital Project*, McGill University, 2001, accessed on April 18, 2014, <http://digital.library.mcgill.ca/countyatlas/showtown2.php?TownID=Dickinson%27s+Landing>. The photograph was taken from: "Dickenson's Landing," *The Lost Villages Historical Society Website*,

Although the villages' fortunes were contingent on the movement of boats along river as well as the trains and automobiles that passed through, internally they were "walking villages" or pedestrian spaces, where the pace of life moved with the motion of human bodies. Here, "walking was a 'commonplace and ordinary' necessity... 'when you wanted to go somewhere, you walked.'"<sup>26</sup> In contrast to the concept of time and space compression – a speeding up of life's pace and overcoming spatial barriers associated with the growth of capitalism and modernity – the mode of walking resists this collapse, and instead "coagulates time, expands distance and makes places dense and prickly with details and complexities."<sup>27</sup> The walker's perception of time and space lends itself to a higher resolution experience of the spaces they traverse. Unlike abstracted maps or rapid modes transportation, pedestrians' bodies and vision accumulated and exchanged complex detail about the topography, built and natural artifacts, the weather, and one another, until this tactile knowledge became thoroughly embodied, even "second nature." In many ways, the Seaway's story is about facilitating and accelerating time and space compression, and advocates often framed arguments in terms of speed and relative distance to foreign destinations. However, the village walker does not experience this sense of temporal acceleration and spatial collapse.

Inhabitants internalized patterns of movement and social nexuses. Erma Stover, a young Iroquoian at the time of the floods, recalled: "It was such a small town that you

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accessed on April 18, 2104, <http://lostvillages.ca/history/the-lost-villages/dickinsons-landing/> (used with permission).

<sup>26</sup> Quote taken from an interview with Jean Shaver of Iroquois, March 31, 2000. Parr, *Sensing Changes*, 82, 218 (Fn8).

<sup>27</sup> David Harvey, *The Condition of Postmodernity* (Oxford: Blackwell Publishers, 2011), 240; Joseph Amato, *On Foot: A History of Walking* (New York: NYU Press, 2004), 276; Parr, *Sensing Changes*, 82. For another excellent book on walking see: Rebecca Solnit, *Wanderlust: A History of Walking* (New York: Penguin, 2000).

didn't need a telephone, you all just showed up at the same place, like the ball fields at night or the canal in the afternoon, or the rinks in winter."<sup>28</sup> These social spaces coalesced through shared organic experience, they became places *d'habitude* (of habit) – physical spaces embodied and marked on the mental maps of residents. Similarly, the villages grew up alongside the river, their connection was inextricable, and the terms of this relationship constantly renegotiated. The villages displayed the artifacts of their histories, a patchwork of houses, workplaces, public and private spaces constructed over a century and a half. To an outsider, the villages may have appeared to be “poorly planned” but closely-knit communities.<sup>29</sup> Many of the markers of postwar “modern” communities did not exist in these spaces, but they had ineffable qualities that escaped the abstracted modern gaze. Village perambulators adapted themselves to these spaces through their movement, internalizing sensory information and a complex history.

The current along this portion of the St. Lawrence was swift, typically moving between eight and ten miles an hour.<sup>30</sup> The river's velocity signaled danger. To local resident, Shirley Kirkby-Carnegie, the river was both “interesting” and “a bit treacherous too.” She continued, “you had to be careful on that river... we had a rowboat, which I turned over top, over on my head and almost drowned, but we were quite casual with the

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<sup>28</sup> From an interview with Erma Stover of Iroquois, April 5, 2000. Parr, *Sensing Changes*, 84, 219 (FN20).

<sup>29</sup> Paraphrased from an interview with Arliss Casselman of Iroquois on April 12, 2000. University of Western Ontario, “Visiting Old Iroquois,” *Megaprojects New Media Website*, accessed January 27, 2014, [http://megaprojects.uwo.ca/iroquois/OldIroquois\\_content.html](http://megaprojects.uwo.ca/iroquois/OldIroquois_content.html).

<sup>30</sup> By contrast, the mean velocity of the International Section of the St. Lawrence was computed by the Army Corps of Engineers in 1869 to be 1.288 miles per hour. See: United States, Army Corps of Engineers, *Report of the Chief of Engineers, U.S. Army*, Executive Document 1, Pt.2, 41 Congress, 2 Session (Washington: GPO, 1868), 584. The in-text figures are drawn from: United States, Army Corps of Engineers, *Hydraulic Discharge Measurements and Regimen Changes on the Great Lakes Connecting Channels and the International Section of the St. Lawrence River, 1841-1993* (Washington, DC: Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data, March 1994), 7-6 – 7-8, Appendix C, Table 7.8, C7-12 – C7-13.

river.”<sup>31</sup> Those who ventured into the St. Lawrence did not experience the river passively, but actively engaged it. On these occasions the river tested the embodied knowledge of the participant who actively reaffirmed their tactile expertise. Leo Merkley, another Iroquois resident, echoed this sentiment, saying: “You learned to respect it [the river]... because it was swift, if you fell in you had to be a real strong swimmer to get out of it.”<sup>32</sup> Drowning posed a real and perennial threat to those who ventured out on the river, especially the uninitiated. You had to learn the river, and acquire this knowledge through tactile experience and intergenerational transfer. As valley resident Lee Shaver noted, with a distinctly Canadian intonation: “Everybody lived with the river, and knew it, eh... Everybody, they all played on the river, like most of the people in town had a boat, eh.” Locals learned the river through work and play, and embodied it in the sinews of their muscles and maps in their minds. Lee Shaver learned the river by direct interaction and intergenerational transmission: “we fished a lot, my dad and I fished a lot... when we got bigger we used to swim every night at Iroquois Point.”<sup>33</sup> To navigate the river’s hydrologic idiosyncrasies you needed someone to “show you how to row and how to hit the current properly and if you wanted to get up around a swift point when you’re rowing... it was a quick trick, to pick out the little eddies.”<sup>34</sup> This riverine knowledge was specific and required a tactile, embodied understanding of the river’s hydrology, information contingent on season and climate, and the transfer of data across generations.

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<sup>31</sup> Audio Recording of an interview with Shirley Kirky-Carnegie, from an interview conducted on March 17, 2000. University of Western Ontario, “Visiting Old Iroquois,” *Megaprojects New Media Website*, accessed January 27, 2014, [http://megaprojects.uwo.ca/iroquois/OldIroquois\\_content.html](http://megaprojects.uwo.ca/iroquois/OldIroquois_content.html).

<sup>32</sup> Audio recording of an interview with Leo Merkley of Iroquois on March 29, 2000. Ibid.

<sup>33</sup> Audio recording of an Interview with Lee Shaver of Iroquois on March 31, 2000. Ibid.

<sup>34</sup> Taken from an interview with Don Thompson of Iroquois on March 31, 2000. Quoted in: Parr, *Sensing Changes*, 88.

Sometimes, in the case of fishing for example, residents transferred their mental maps into a physical form. Locals' sheds often displayed annotated maps and charts that revealed the accumulated knowledge of generations of fishermen. They carefully marked what variety, size, and quantity of fish had been caught at specific locations, and the maps disclosed closely guarded secrets of friends' favorite "fishing holes."<sup>35</sup> Locals physically manifested tacit knowledge in other ways. For example, boat building was a common winter pastime. The sheds that guarded the fisherman's site-specific knowledge often served as off-season construction sites for small vessels. Places where the river's current slowed and its water warmed – in the back-bays and old canals – provided valued spaces for fishing and swimming, and offered winter recreation opportunities. In these places where the surface ice became sufficiently thick, residents skated and played a form of ice hockey called "shinny."<sup>36</sup> These winter activities provided seasonally contingent, but meaningful interactions with the river and among community members.

In short, the residents of the St. Lawrence valley saw themselves as "river people." They took the river into themselves, embodied it in their habits, activities, and markers of self-identification. The river provided a nucleus around which they organized their spatial and social lives. As one local cogently phrased it: "the river was our life."<sup>37</sup> The Seaway's floodwaters inundated more than just the physical geography of the "lost villages," they washed away the site-specific accumulated knowledge of generations, and forced a reorganization of the social spaces and daily patterns of life in adjacent communities. The "pond," as locals pejoratively refer to the power pool – also known as

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<sup>35</sup> Paraphrased from an audio recording of an interview with Carl Van Camp of Iroquois on April 6, 2000. University of Western Ontario, "Visiting Old Iroquois," *Megaprojects New Media Website*, accessed January 27, 2014, [http://megaprojects.uwo.ca/iroquois/OldIroquois\\_content.html](http://megaprojects.uwo.ca/iroquois/OldIroquois_content.html).

<sup>36</sup> Audio recordings of interviews with Leo Merkley and Don Thompson. Ibid.

<sup>37</sup> Audio recording of an interview with Ron Fader of Iroquois on April 10, 2000. Ibid.

Lake St. Lawrence – did not offer the same range of possibilities or serve the same social needs. It was a poor substitute for *their* river.

Despite their self-identification as “river people,” it is important not to manufacture a narrative that implies a state of absolute ecological harmony with the river, or to romanticize life in these communities. Before the Seaway, life in the St. Lawrence Valley was far from utopian. As the communities’ fortunes rose and fell with the old canals, their economic potential stagnated when these canals teetered toward obsolescence. Most of the villages had very little industry and local employment opportunities were scarce. For example, just prior to the Seaway flood, Aultsville’s principal industries included a small, turn of the century gristmill and cheese factory; Dickinson’s Landing also had a cheese factory and a horseracing track; Mille Roches had the “Provincial Paper Mill;” Wales had a modern grist mill built in the 1940s, and a large apple orchard; and the chief employer in Iroquois was the Caldwell Linen Mill. Most of the villages had small business districts populated by local shops and markets; however, none of the communities could be characterized as sites of economic growth or vibrancy. In fact, many of the communities had an aging and shrinking population, as the absence of economic and employment opportunity meant that many young people left the Valley. Some of this stagnation is attributable to living under the specter of the Seaway idea. However, this may not have been the primary factor in the region’s narrative of economic declension, since in the project’s aftermath, substantial regional economic growth remained elusive.

The St. Lawrence was not only a source of local life and activity; it also served as a sink for the things they discarded. In interviews recalling life in the lost villages, locals

recurrently describe the cleanliness of the old river. These interviewees invoke the speed of its current and cold temperature of its water as markers of the river's sanitary qualities.<sup>38</sup> Fast-moving water is contrasted with stagnant, odorous water, and cold water is equated with sterility. These ideas tacitly evoke the belief that running water had a self-purifying nature, which remained pervasive into the early 20<sup>th</sup> century, although chemists, biologists, and sanitary engineers began to seriously question this idea by the 1890s.<sup>39</sup> Accordingly, none of the lost villages had water treatment facilities; they simply discharged their raw sewage into the St. Lawrence and let the self-purifying nature of the river – and downstream communities – deal with it. Moreover, operating under the same assumptions, the industries mentioned above discharged their industrial effluent directly into the river. Upstream farmers sometimes dumped the carcasses of dead animals into the river, and, on occasion, they would get caught in the old canal's locks, where the lockmaster had to prod them back out into the current, where they simply proceeded downriver.<sup>40</sup> The river also claimed human lives; sometimes, people drowned. While the river provided locals with spaces and opportunities for play, it simultaneously carried serious, and sometimes fatal risks. Like Henry Miller's quote set out on this dissertation's first page – men (along with women and children) drowned in the St. Lawrence, and not only in myth or legend, but in time, space, and history.<sup>41</sup>

The pleasant sight and sounds of the river did not always populate its ambient environment. For example, the Caldwell Linen Mill powered its machinery with coal,

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<sup>38</sup> For a couple examples, see the audio recordings of interviews with Carl Van Kamp and Lee Shaver. Ibid.

<sup>39</sup> Joel A. Tarr, *Search for the Ultimate Sink: Urban Pollution in Historical Perspective* (Akron, OH: University of Akron Press, 1996), 190.

<sup>40</sup> See: Mabee, *The Seaway Story*, 217; and Parr, *Sensing Changes*, 85.

<sup>41</sup> Paraphrasing the quote from Henry Miller's *Tropic of Cancer* set out on the very first page of this dissertation.

which boats delivered to Iroquois' wharf. Upon the coal shipment's seasonal arrival, dump trucks would work steadily day-and-night to transport the coal to the mill. The persistent sound of these trucks traversing the town kept residents up at night, and temporarily became the village's keynote. One resident, Jean Shaver, recalled the pervasive coal dust that accompanied this process. Dust descended on community, obscured people's vision, blackened their windows, and seeped into their homes. Jean Shaver exclaimed: "God help anybody who left their washing out on the line."<sup>42</sup> After the coal passed through, the entire village seemed to require a thorough scrubbing.

The villages' proximity to the river also carried other seasonal scourges. Shad-flies – known more generally as caddis-flies – descended on communities near the river like a pestilence in spring. Their presence darkened the village, and their brief lives left their foul smelling remains – sometimes over an inch deep – all over the streets.<sup>43</sup> Ironically, their recent disappearance at certain places along the river has alarmed local residents and fueled speculation that they may be indicators of changing water quality.<sup>44</sup> However, in the lost villages they were seen as pests, pollutants, and a generally unpleasant phenomenon.

Like the pedestrians who traversed the villages, it is important to acknowledge the complexity of the spaces. Unchecked, nostalgia can easily transgress into romanticism.

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<sup>42</sup> From an audio recording of an interview with Jean Shaver. University of Western Ontario, "Visiting Old Iroquois," *Megaprojects New Media Website*, accessed January 27, 2014, [http://megaprojects.uwo.ca/iroquois/OldIroquois\\_content.html](http://megaprojects.uwo.ca/iroquois/OldIroquois_content.html).

<sup>43</sup> For a description of these shad-flies, listen to the audio recordings of interviews with Keith Beaupre and Joseph Roberts. *Ibid*.

<sup>44</sup> For example see: Sean Ewart, "Caddisflies are missing from Ogdensburg, and no one really knows why." *Watertown Daily Times Website*, June 10, 2013, accessed January 27, 2014, <http://www.watertowndailytimes.com/article/20130610/NEWS05/706109953>. Also see: Bruce Conn, "Prologue: Bridging the Knowledge Gap – Science and Society Working Together for Environmental Understanding," *Voices for the Watershed: Environmental Issues in the Great Lakes-St. Lawrence Drainage Basin*. Bruce M. Littlejohn and Gregor Gilpin Beck, eds. (Montreal: McGill-Queens University Press, 2000), 1-3.

Like the abstracted view of Seaway planners, this exemplifies a narrowed field of vision that marginalizes ignoble detail. The villagers' experiences, habits, and ambient were not always pleasant or desirable, but they all contributed to their sensuous history. Seaway planners promised to undo this history, good or bad, by reengineering the landscape. The concrete structures and the "pond" now mask these stories, and marginalized them in the name of progress.

*The Russians are Coming!*

For much of the first half of the 20<sup>th</sup> century, the people of the St. Lawrence Valley quietly lived under the prospect of Seaway floods. However, this prior knowledge did not tend to ameliorate their discontent or weaken their protests when land acquisition agents showed up at their doors. Seaway planners and administrators publically pronounced that those sacrificing their homes and habitus contributed to the noble causes of progress and bi-national harmony, but these contributors then had to fight for a participatory role to determine their future. By attempting to engage and naturalize locals' tacit participation in the project, Seaway planners committed a form of symbolic violence. However, when they deployed legal mechanisms to forcibly confiscate lands their actions transgressed into a form of physical violence, not specifically committed against locals' bodies, but against their property and interests.

Here, and in the previous chapter, the high-modern impulse is described as a transnational phenomenon, shaped by specific discursive and ideological contexts; there is no doubt that the process of land acquisition along the St. Lawrence differed substantially from its high-modern correlates operating under different socio-political arrangements. However, the dispossession of peoples in the name of "progress" or

“modernity” is a common attribute of high-modern designs. To those forfeiting their property, the contextual distinctions seemed less than clear. On many occasions, when the land acquisition agents showed up on doorsteps, locals muttered or sometimes even shouted something about the “Russians.”<sup>45</sup> One tenacious Osnabruck farmer, engaged in a dispute over the valuation of his land, allegedly called one of Ontario Hydro’s land acquisition agents a “Kremlin” operative, and resisted until the “Russian” raised the acre price from \$30 to nearly \$100.<sup>46</sup> This epithet transcended the national boundary, and New Yorkers joined their Canadian counterparts in labeling American acquisition agents “Russians.” Sometimes, like the previous illustration, an amplification and inversion of the cold war rhetoric that underscored the project, paid compensatory dividends to locals.

Seaway planners also had to navigate the acquisition of Native American lands and the additional hurdles posed in the further dispossession of peoples with a long history of enduring violence in the name of Western and westward progress. Across the region, locals engaged in various forms of resistance – from legal recourses and the cultivation of public sentiment, to physically refusing to leave their homes in the face of on-coming bulldozers. In the end, the “Russians” got their land for the Seaway, but many locals leveraged their obstinacy and tenacity for concessions from the land acquiring agencies, and Native American groups proved the most successful in this regard.

The first acquisitions happened around Iroquois, where the St. Lawrence Seaway Authority eagerly pressed the construction of the Iroquois Lock and Control Dam.

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<sup>45</sup> See: “Interviews with Mr. and Mrs. Simser, near the Massena Canal, August 1956; Walter F. Wilson, Louisville, August 27, 1956; Daniel Conglas (?), head of the Landowners Association, Louisville, March 21, 1957; Thomas Fay, Postmaster, Massena, September 15, 1958,” SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 3, “Field Notes for the Seaway Story.”

<sup>46</sup> “Interview with A.W. Lamport, Project Property Officer, Ontario Hydro, Cornwall Ontario, August 5, 1958,” SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 3, “Field Notes for the Seaway Story.”

However, the vast majority of the expropriation activities in Ontario fell to Ontario Hydro – the only agency with any experience in expropriation, as noted in the previous chapter. Although most of the acquisition took place in Ontario, the two utilities – PAsNY and Ontario Hydro – evenly shared the cost of expropriation and relocation for the flooding of Big-Mo’s power pool.<sup>47</sup>

To meet accelerated construction deadlines, especially Inundation Day, the land acquisition process had to move swiftly and continued during construction, with agencies prioritizing areas to expropriate according to their work schedules and shifting plans. In some cases, according to Ontario Hydro’s “Project Property Officer,” the pace of construction meant work began on some properties before the necessary expropriation agreements had been legally finalized.<sup>48</sup>

In Ontario, where the vast majority of the expropriations occurred, the process got off to a poor start when Hydro confronted obstreperous communities. Robert H. Saunders made it abundantly clear that Hydro intended to pay market value plus a small customary percentage for the inconvenience of seizure (the exactly percentage he had in mind is unknown, but normally it would be ten to fifteen percent). This suggestion outraged those facing relocation. In a region where the Seaway specter had depressed prices for nearly half century, how could the “market value” of spaces to be drowned be fairly determined? Who would buy it? Residents pressed their respective municipal councils for help, and the councils collectively demanded that Hydro – following the

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<sup>47</sup> For the expropriation arrangements between PAsNY, the Corps, SLSDC, and NY Department of Public Works, see: Becker, *From the Atlantic to the Great Lakes*, 26, 52.

<sup>48</sup> “Interview with A.W. Lamport, Project Property Officer, Ontario Hydro, Cornwall Ontario, August 5, 1958,” SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 3, “Field Notes for the Seaway Story.”

example of the TVA – pay replacement cost, rather than market value for any property seized.<sup>49</sup>

Rumors circulated that 1,000 Valley citizens planned to march on Toronto in support of their councils' demands, and Saunders became mildly alarmed. The Hydro Chairman proposed visiting the Valley to hear complaints, but remained adamant that Hydro's previous expropriation experience on a smaller scale provided a model for the acquisition of Seaway lands. This simple expression of intransigency illustrates a disconnect between planners' vision and local concerns. The expropriation mechanisms that Saunders sought to deploy were non-discriminatory, a one-size fits all solution. This kind of abstract solution to the expropriation problem, marginalized locale specific considerations, and homogenized local concerns.

In August 1954, Hydro announced its "rehabilitation" plans. Iroquois would move one mile north, a portion of Morrisburg – including their business district – would be flooded and replaced elsewhere, and all the villages between Morrisburg and Cornwall would be inundated and replaced by two new towns.<sup>50</sup> In November 1954, a public meeting was called at Morrisburg to respond to the plans and address expropriation concerns. Saunders sent George H. Challis, Hydro's vice-chairman and a Morrisburg native, to attend the meeting and defend the Utility's proposals. Nearly 2,000 locals from

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<sup>49</sup> Ontario Federation of Agriculture, *Principles to be Considered in the Acquisition of Farm Property for the Public Purposes in Ontario* (Guelph, ON: The Federation, 1955), 2. Also see: Cecil B. Belyea, Agricultural Economist, Ontario Federation of Agriculture to Carleton Mabee, April 2, 1956, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 71, Folder 12, "Correspondence;" and Mabee, *The Seaway Story*, 206.

<sup>50</sup> Initially, Hydro proposed only one town to replace all the communities east of Morrisburg. However, because the villages traversed two different townships, and neither wanted to lose tax revenue, the plan was amended to create two towns, one in each township. "Proposals for Rehabilitation of Communities Affected by the St. Lawrence Power Project." Joint Statement by Robert H. Saunders, Chairman, Ontario Hydro, and William K. Warrender, Minister of Planning and Development, Province of Ontario. Printed in Newspaper Format. August 1954. SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 68, Folder 5, "Ontario Hydro and the St. Lawrence Power Project."

Morrisburg and surrounding communities packed into a public school to castigate and jeer Challis, who, in the moment, served as the symbol of their frustration and the unjust terms of dispossession.<sup>51</sup> They protested the market value terms of expropriation, expressed concern about Hydro's "horse-trading" methods – dishonesty and lowballing in property evaluation – and demanded a fair price on the first offer.<sup>52</sup> In general, the people of the Valley worried that Ontario Hydro – an institution created to serve the people – had grown into a disproportionately sized bureaucracy, impossible for individuals to defy. Historian Carleton Mabee described Hydro as both the umpire and the pitcher of the game – the agency needing the land and empowered, subject to the courts, to decide when to take it and what to pay for it; moreover, its political influence allowed it to virtually write the game's rules too.<sup>53</sup> Despite their protestations, Hydro and Saunders remained resolute, and there seemed to be no regional institution with enough influence to challenge their schemes.

More attuned to public opinion than the bureaucracies under their purview, provincial politicians responded to local concerns. Premier Leslie Frost sympathized, or found it politically expedient, to circumvent Hydro's channels and establish an office in Morrisburg, staffed with provincial planners – not Hydro agents – to hear local grievances and dispense advice. Moreover, in consultation with municipal representatives, the Premier and Hydro agreed to establish a "St. Lawrence Board of

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<sup>51</sup> "Rehab Plans Bring Protests at Morrisburg." "Inundation Issue – An Historical Issue Tracing the Conception and Progress of the Giant Project." *Cornwall Daily Standard Freeholder*, June 28, 1958, 9, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers."

<sup>52</sup> Hydro's Project Property Office claimed that Hydro, as a matter of policy, did not approve of "horse-trading" but did sanction the revision of prices, if superior acquisition officers thought an offer was too low, if new information came in, or if errors had been made. See: "Interview with A.W. Lamport, Project Property Officer, Ontario Hydro, Cornwall Ontario, August 5, 1958." SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 3, "Field Notes for the Seaway Story."

<sup>53</sup> Paraphrased from: Mabee, *The Seaway Story*, 206-207.

Review” to hear appeals from local property owners unable to reach a settlement with the utility.<sup>54</sup>

Despite their efforts to ameliorate the pervasive disaffection felt by Valley residents, it appears that the Review Board did not substantially change the terms of the expropriation process. In most of its decisions, the Board recommended that Hydro pay slightly higher prices for the land in question, and Hydro typically conceded. Only 14 cases proceeded above the Review Board to the Ontario Municipal Board – a provincial court – which followed the same trend and tended to marginally augment prices.<sup>55</sup>

Hydro’s own Project Property Officer doubted if, after claimants paid their legal fees, the Municipal Board’s slight increases made any price difference at all.<sup>56</sup> It further seems that the Review Board’s efficacy was hampered by the reluctance of locals to engage their arbitration services. Ronald Stagg claimed that “a tendency in Ontario to respect public institutions” contributed to this hesitancy; but that explanation seems unsatisfactory given the local tenor surrounding the expropriation and rehabilitation processes.<sup>57</sup> Some local political representatives hinted that they feared the possibility of reprisals from the massive utility. In 1956, one municipal representative even declined to speak to the press about dissatisfaction with Hydro’s methods, saying: “Look, I can’t go

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<sup>54</sup> “Records on Expropriation Hearings Relating to the St. Lawrence Seaway and the Ontario Hydro Electric Power Commission, 1954-1959,” Archives of Ontario (AO), RG37-6, *Ontario Municipal Board Applications and Appeals Files*, Box 1.

<sup>55</sup> *Ibid*; and “Interviews with W.S. Elliot, Chairman of the Osnabruck Planning Board, Ingleside, Ontario, July 6, 1957; and Dr. J.A. Phillips, Chairman of the Cornwall and Suburban Planning Board, Cornwall, Ontario, April 8, 1957 and April 5, 1958,” SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 3, “Field Notes for the Seaway Story.”

<sup>56</sup> “Interview with A.W. Lamport, Project Property Officer, Ontario Hydro, Cornwall Ontario, August 5, 1958,” SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 3, “Field Notes for the Seaway Story.”

<sup>57</sup> Stagg, *The Golden Dream*, 183.

into that... I'm a property owner... and they're a big outfit. I am afraid of reprisal too."<sup>58</sup>

Whether underscored by a nebulous sense of respect for public institutions or fear of retribution, most Valley residents did not avail themselves of the services offered by the Review Board, disgruntledly settled directly with Hydro, and geared up for the next fight – relocation plans.

Across the river in New York, the same sense of indignation underscored the expropriation process; and PASNY, led by Robert Moses, proved significantly less inclined to entertain, let alone accommodate, local concerns. Unlike their Canadian counterpart, PASNY offered little in the way of relocation plans, institutions for consultation, or boards for arbitration, and its offers rarely exceeded market price. In fact, PASNY's official policy followed state highway law, and did not include the inconvenience bonus of ten to fifteen percent, customary on the Canadian side. Moses, who had long been responsible for the seizure of land for parks, housing projects, highways, and now waterways, saw the issue in certain terms. He said, when the state takes land "there is bound to local apprehension," and dismissed the loudest objections as the voices of land speculators.<sup>59</sup> Moses had no patience for holdouts, and those who took their cases against PASNY and the New York Department of Public Works to the legal system found that the courts typically sided with the state. Moses further inflamed anger on the American side by taking land not specifically allocated for the Seaway, but for adjacent "recreational purposes." Those whose land had been confiscated for parks

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<sup>58</sup> Taken from an untitled clipping in the *Watertown Daily-Times*, September 12, 1956, n.p., SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 19, Folder 1, "Canada: Moving, 1956." Also see: Mabee, *The Seaway Story*, 207.

<sup>59</sup> Quoted in: Power Authority of the State of New York, "Land Acquisition on the American Side for the St. Lawrence Seaway and Power Projects, July 18, 1955," 1, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 66, "Special and Annual Reports."

adjacent to the Seaway felt that their property had been seized under false pretenses, and objected to expropriation for such “frivolous purposes.”<sup>60</sup>

Unlike Ontario Hydro, Moses and PASNY seized mostly farmlands for the Seaway. Waddington, NY, the village most affected by the flooding, indirectly lost its major industry – a milk processing plant. When PASNY seized one-third of the dairy farms supplying the plant, its owners abandoned the business without plans to relocate. To compensate, hoping to draw tourism, residents allowed PASNY to relocate the highway through the center of their town. However, by Inundation Day, Waddington residents already regretted the noise and velocity of traffic that accompanied the road.<sup>61</sup>

On both sides of the border, land acquisition agents had a difficult and mostly thankless job. Apart from being called “Russians” and generally derided, they had to negotiate “fair prices” for people’s homes, spaces permeated with sentimentality, histories, and senses of self. “What would you do?” asked one of these “Russians” in an interview with Carleton Mabee, “would you allow each owner to hold up the Seaway till he got the price he wanted for his land?” This same agent once evaluated a farm at \$17,500, to which the owner countered with \$75,000. After listening to the farmer review his life and lands for 40 hours, the agent raised the price to \$20,000.<sup>62</sup> Implicitly, the added value of the farmer’s experience on the land, his sentiment, and sense of

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<sup>60</sup> Becker, *From the Atlantic to the Great Lakes*, 51; R.G. Ragland, Real Estate Staff, Buffalo District Office to Col. Loren W. Olmstead, February 9, 1955, “Memorandum, subject: Account of Meeting with Representatives of St. Lawrence Seaway Development Corporation, February 8, 1955,” NARA II, *Records of the Immediate Office of the Secretary of the Army, 1947-1964, 1970-1972*, RG 335.2, A1 16-B, Box 1, “Correspondence of the St. Lawrence Seaway Development Corporation, 1953-1961.”

<sup>61</sup> “Waddington Has New Look,” “Progress Report No. 9,” *Watertown Daily-Times*, April 29, 1957, 11; “Waddington has Undergone Major Upheaval in 5 Years,” *Massena Observer*, June 25, 1959, 55 and “New Park Facilities Built By State at Waddington, Sewage Plant Also Added,” *Massena Observer*, June 25, 1959, 57.

<sup>62</sup> Mabee, *The Seaway Story*, 209-210. Also see: Howard Barrow, “Where Will We Go As Seaway Comes? Ask Waddingtonians,” *Watertown Daily-Times*, n.d., 1954, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 1, Folder 2, “Clippings – St. Lawrence Seaway, 1953-1954.”

identity was worth an extra \$2,500. How do you value these unquantifiable, ineffable qualities? The short answer is – you cannot. The additional \$2,500 represented an arbitrary bonus and a byproduct of the agent’s fatigue. Land agents had to haggle with the stubborn and often rude locals, and had to distinguish between genuine objectors and speculators who feigned sentiment for lands and the river. On the New York side, the agents commiserated by internally circulating a list delineating all the qualities needed to carry the task forward everyday, it read: “The tenacity of a bulldog, the diplomacy of a wayward husband, the patience of a self-sacrificing mother, the humor of a comedian, the assurance of a Harvard man, and the persistence of a bill collector.”<sup>63</sup>

### No \$24 Manhattan Deal

First Nations presented a special case during the expropriation/relocation process. Seaway plans demanded portions of two reservations – the St. Regis/Akwesasne Reservation in the International Section, which straddles the borders between New York, Ontario, and Quebec, and includes traditional lands on Cornwall and Barnhart Islands; and the Caughnawaga (Kahnawake) Reserve, situated at the downstream end of Lake St. Louis on a piece of land protruding into the St. Lawrence, narrowing its flow, and forming the head of the Lachine Rapids. Their protests mirrored other local objections – the people did not want to lose their lands and homes – but the circumstances and histories differed greatly. The Natives on both reservations determined they would not accept “any \$24 Manhattan deal,” and fought tenaciously, but unsuccessfully to retain their properties.<sup>64</sup>

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<sup>63</sup> Mabee, *The Seaway Story*, 209.

<sup>64</sup> Quoting Chief Choking Fire of the Caughnawaga reservation, see: “Indian Tribes Hold Up Seaway Digging,” *Ogdensburg Journal*, April 30, 1955, 1.

The Mohawks of the St. Regis/Akwesasne reservation stood to lose 86 acres from the tip of their reservation, an area known as Raquette Point, located just below the power dam site; 130 acres of Cornwall Island for bridge approaches, toll gates, and other highway facilities; as well as the entirety of Barnhart Island – about 1,700 acres – which, from the Natives’ perspective, comprised a part of their traditional lands. PASNY appropriated Barnhart Island for the construction of a New York State Park (Robert Moses State Park), Big-Mo, and the Long Sault Control Dam. A dispute over ownership meant that the Akwesasne received no compensation for the loss of the lands on Barnhart. Downstream, the Kahnawake lost 1,260 acres of their reservation to the construction of the South Shore Canal that circumvented the Lachine Rapids.

Until the mid-1980s, Seaway discourse did not include Native voices and only incidentally commented on their stories. However, historian Laurence M. Hauptman’s work – *The Iroquois Struggle for Survival* (1986) – helped to interject a First Nations’ narrative and the Iroquois’ perspective into the Seaway story. Hauptman argued that the collective experiences of the Akwesasne and Kahnawake helped to galvanize a movement among the Iroquois to reassert their sovereignty and treaty rights, renew their land claims, carefully cultivate public opinion, and organize effective demonstrations and protests. The powerful Native backlash in the face of Seaway land appropriations, Hauptman contends, directly fed into the rise of “Red Power” militancy.<sup>65</sup>

The Iroquois actually fought Seaway planners on three fronts. The Akwesasne and Kahnawake both battled Lionel Chevrier’s Canadian Seaway Authority; and the Akwesasne and the Tuscarora – a reservation along the Niagara River, just downstream

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<sup>65</sup> Laurence M. Hauptman, *The Iroquois Struggle for Survival: World War II to Red Power* (Syracuse, NY: Syracuse University Press, 1986), 123, 150.

from the Falls – squared off against Robert Moses and PASNY.<sup>66</sup> For Seaway planners, these Native communities presented a bothersome additional set of problems that sapped precious time and resources. For the Natives, Seaway planners represented a recurring theme of “settlers” seizing their lands and marginalizing their practices and cultures under the auspices of “civilization” and “progress.” The Seaway engendered another in a long series of dislocations in Iroquois community and precipitated a crisis in the little that remained of their homelands.

The Kahnawake first confronted the Seaway Authority’s intentions to expropriate their lands in the autumn of 1954. By September 1955, the Attorney General of Canada, at the Authority’s request, initiated expropriation proceedings in the Superior Court, District of Montreal.<sup>67</sup> Although Chevrier grew up in Cornwall in close contact with the Akwesasne, he fundamentally misunderstood the Native community’s concerns and refused to cede any legitimacy to their claims. To him, the Seaway narrative could be reduced to: “a chronicle of men fighting for self interests against nations fighting for national interests.”<sup>68</sup> He trivialized the Kahnawake’s protests, claiming they saw “a chance to make some money out of the seaway” and they insisted on “having a lot of fun at the expense of the seaway.” According to Chevrier, some members of the Kahnawake “staged war-dances against the seaway” to capture “big headlines in the Montreal newspapers,” but despite these extravagant and highly publicized demonstrations, Chevrier remained convinced that most of the Kahnawake were “satisfied with what we

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<sup>66</sup> The dispute between the Tuscarora and PASNY will not be explicitly discussed in this chapter, but statements issued in that disagreement demonstrate Robert Moses and his agency’s thoughts and modes of interaction with First Nations. For a summary of this episode, see: *Ibid.*, Chapter 9, “Moses Parts the Waters: The Reservoir at Tuscarora”, 151-178.

<sup>67</sup> Chevrier, *The St. Lawrence Seaway*, 106.

<sup>68</sup> *Ibid.*, 5.

are doing.”<sup>69</sup> The head of the Authority thoroughly underestimated the Kahnawake’s resolve and the pervasiveness of their disaffection. Despite his dismissals, the reservation was in open rebellion against the Seaway project, and the Kahnawake did not sit passively while the Seaway Authority expropriated their lands.

In response to the Seaway Authority’s declared expropriation intentions, in March 1955, Chief Angus Joseph K. Beauvais called a Band meeting to determine the Kahnawake response to the incipient crisis. In a referendum that followed the meeting, the Band roundly rejected surrendering their land to the Seaway Authority. Moreover, any attempt to seize their land for the Seaway, they claimed, directly violated treaties made between the British crown and the Iroquois Confederacy – their territory had been assured by the British Proclamation Line of 1763, and reaffirmed by subsequent agreements.<sup>70</sup> In short, the British promised the Reserve lands to the Kahnawake “as long as the water flows, the sky is blue, and the grass is green.”<sup>71</sup>

The Kahnawake attempted to entreat British involvement in the Seaway expropriation issue. They claimed that since the Six Nations of the Iroquois held treaties with the British government that predated the British North America Act (1867), the Seaway Authority had, in fact, no authority over their lands. They wrote open letters to

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<sup>69</sup> Ibid., 105-107.

<sup>70</sup> The Royal Proclamation of 1763 forbade British Colonists to take or settle on any lands delineated as “Indian lands” in the boundaries established by the Proclamation. For an example of the Iroquois’ deployment of these claims, see: “Notes of a Meeting... July 19, 1956, by the Superintendent General of Indian Affairs with the newly elected council of the Caughnawaga Band: Caughnawaga Band Council Resolution, July 13, 1956,” LAC (Montreal District Office), *Records of the Montreal District Office, Indian and Inuit Affairs Program sous-fonds, Department of Indian Affairs and Northern Development fonds*, R216-185-5-E, Vol.4, “Land Sales, Montreal District, Caughnawaga, St. Lawrence Seaway.” For a summary of their position, see: Hauptman, *The Iroquois Struggle for Survival*, 136-137.

<sup>71</sup> Quoted in: Mabee, *The Seaway Story*, 208.

Queen Elizabeth II and the British Parliament soliciting their intervention.<sup>72</sup> However, the British, already divesting themselves of overseas political possessions, had no interest in intervening in what they viewed as a domestic Canadian dispute. Chevrier, dismissed the pre-Canada defense as legally untenable, and the Superior Court of Montreal agreed when it rejected the Kahnawake's argument on January 18, 1957.<sup>73</sup> Undeterred, the Band continued to press this argument, and brought their case to international forums. The Band's Chief Councilor, Matthew Lazare, sought hearings before the United Nations and the World Court in The Hague, but these efforts proved futile.<sup>74</sup>

Despite their inefficacy, the invocation of the British as signatories and protectors of Native treaty rights raises a number of interesting but perilous questions about Native sovereignty, nationalism, as well as cultural and political legitimacy. The Seaway has been defined as a bi-national undertaking, and an envirotechnical system that transcends political boundaries; but, until recently, the transgression of First Nation boundaries and sovereignty has been absent in Seaway discourse and history.

The Seaway Authority initiated a plan to divide and conquer the objections of the Kahnawake. The Authority offered to advance cash, subject to legal settlements, to economically hard-pressed Band members, and exploited internal political divisions among the Band that increased from 1956 onward. For his part, Chevrier held three critical meetings on the Kahnawake reserve – in September 1955, March 1956, and July 1956. In the course of these meetings, hoping to win support and divide opposition,

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<sup>72</sup> For example: "Open Letter to Queen Elizabeth II by Chief Tawistawis, undated," LAC (Montreal District Office), *Records of the Montreal District Office, Indian and Inuit Affairs Program sous-fonds, Department of Indian Affairs and Northern Development fonds*, R216-185-5-E, Vol.4, "Land Sales, Montreal District, Caughnawaga, St. Lawrence Seaway."

<sup>73</sup> Chevrier, *The St. Lawrence Seaway*, 102-108.

<sup>74</sup> Hauptman, *The Iroquois Struggle for Survival*, 137; Chevrier, *The St. Lawrence Seaway*, 105-107.

Chevrier progressively sweetened the deal. His agency offered to fill in low-lying lands, provide a modern water and sewage system, preserve old stone dwellings, build a wall to protect the Jesuit Mission that served as the Reserve's centerpiece, award reversionary rights to lands not used by the Authority, and to pay equal compensation to whites being displaced upriver.<sup>75</sup> By the conclusion of the July 1956 meeting, Chevrier thought he had silenced his Native opponents by reaching a general financial settlement for the South Shore Canal. The two parties cemented this uneasy settlement with a traditional smoking of the calumet (ceremonial pipe), which, to Chevrier's later embarrassment, he puffed upside down. The photo below depicts that moment, and the expression worn by Chief Beauvais' is evocative of the Kahnawake's deep ambivalence.



©Montreal Gazette Photo Service<sup>76</sup>

Despite the tentative, general financial agreement, internal divisions within the Kahnawake persisted and factions of the Band continued to protest in the courts and

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<sup>75</sup> Hauptman, *The Iroquois Struggle for Survival*, 138; Chevrier, *The St. Lawrence Seaway*, 107-108.

<sup>76</sup> Photo of Chevrier smoking the calumet (ceremonial-pipe) is reproduced in: Chevrier, *The St. Lawrence Seaway*, 171.

international venues. Similarly, the Canadian government did not monolithically support the Seaway Authority's plan or tactics. In a 1955 parliamentary debate, the Progressive Conservative MP from Notre-Dame-de-Grâce (the electoral district that encompassed the Kahnawake Reserve), William Hamilton, argued that the Seaway channel could have been placed further into the river to avoid the seizure of Native lands. Hamilton further charged that the Authority showed "callous disregard" for white communities upstream, and mistreated Native peoples who could not easily defend themselves. Despite the overtly patriarchal tones of Hamilton's protests, he served as an ally in the House of Commons and highlighted the Kahnawake issue. Another MP, D.S. Harkness of Calgary, went further and accused the Ministry responsible for Native affairs of collusion with the Seaway Authority in the expropriation of Mohawk lands, and suggested setting up a claims commission to settle outstanding claims across Canada and to delineate what property Natives' "own and do not own." Even John Diefenbaker, the future Conservative Prime Minister, openly speculated whether Parliament had the right to simply set Natives' treaty guarantees aside.<sup>77</sup> For all their publicly stated concern, these parliamentarians offered nothing more than discursive support for the Mohawks' struggle; and the skeptical could characterize their complaints as empty gestures offered for political sympathy, not in solidarity. Indeed, the Conservative Party's electoral victory, in June 1957, did not alter the Seaway's course or the fortunes of those it displaced.

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<sup>77</sup> Canada, Parliament, House of Commons, *Debates*, 22 Parliament, 2 Session, Vol.5, 1955 (June 27, 1955), 5307-5313; Canada, Parliament, House of Commons, *Debates*, 22 Parliament, 5 Session, Vol.3, 1957 (March 25, 1957), 2635-38. For more information on Parliamentary backlash against the Authority's proposals, see: Hauptman, *The Iroquois Struggle for Survival*, 138; and Mabee, *The Seaway Story*, 208.

Although the Kahnawake leadership formally acceded to the Seaway Authority's land demands, many individual members continued their defiance, and insisted they needed every acre for the Band's growing population. They threatened to impose additional tolls on ships passing through their lands, and some entrenched themselves on their property and refused to move for the machinery of expropriation. In some cases, the Authority's response to these Seaway apostates was swift and ruthless. Edmund Wilson, the literary and social critic, recounted the story of one woman who refused to move in the *New Yorker* magazine. She left her house to hang clothes in the yard, turned, saw a bulldozer approach her property, and watched it promptly demolish her house. For Wilson, the houses demolished to make way for the Seaway remained in his mind "as a symbol of the fate of the individual at the mercy of modern construction." One such house that he visited on the St. Regis Reserve, "had been scrunched like a cockroach, a flattened out mess of muddied boards."<sup>78</sup>

Others resisted the Seaway Authority with more successful outcomes. When the Authority told Louis Diabo, a member of the Kahnawake, to move, he refused. In consultation with the Ministry of Citizenship and Immigration – which housed the administrative structure of Indian Affairs – he determined the Authority's offer for his property was too low and demanded a higher price. Unable to come to an agreement, the Authority dug its canal right up to his property and line, and when he continued his refusals, they began digging on the other side. Dynamite blasts rocked his house, his well went dry, and his 69-year old wife walked two miles everyday to retrieve drinking water,

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<sup>78</sup> The latter quote is a commentary on a house he saw demolished on the St. Regis Reserve. Edmund Wilson, *Apologies to the Iroquois* (Syracuse, NY: Syracuse University Press, 1991), 145. The original essays appeared in the *New Yorker* between 1959 and 1960. The edition cited above is an abridged collection of these works.

but the stubborn Mohawk continued to defy the Authority. Diabo's case became a *cause célèbre* and garnered media attention as well as public sympathy. In the end, Lionel Chevrier personally brought Diabo a generous check for \$70,326, ending the standoff. Moreover, the bad publicity likely goaded the Authority into expanding their redevelopment plans for the entire Reservation. In addition to previous promises, it agreed to fill in swamps, build a beach, and pay the whole community, not just tenacious individuals like Diabo, an additional sum for their loss of land.<sup>79</sup>

Some contemporary commentators insisted that Diabo's intransigency, the Kahnawake's resilience, and the Authority's self-consciousness about its public image, meant that Natives received more generous treatment than their non-native counterparts.<sup>80</sup> However, this claim is difficult to assess, since most upstream Canadian communities slated for relocation interacted primarily with Ontario Hydro, not the Seaway Authority. Moreover, the idea that "compensation equal to whites," as Chevrier promised, or even in "excess to whites" implies a false equivalency between the experiences and expectations of Native and non-Native communities, especially given the First Nations' long histories of exploitation, broken treaties, and centuries of systematic subjugation.

Following the success of Louis Diabo's protest, upstream non-Native communities tried to emulate his actions. For example, one group of about 230 cottage owners who leased government lands located along the old St. Lawrence Canals – principally on Sheek's Island near Moulinette – attempted a collective "Diabo." Their leases' terms explicitly required the owners to remove their cottages whenever asked by

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<sup>79</sup> Hauptman, *The Iroquois Struggle for Survival*, 138-139.

<sup>80</sup> For example, see: Mabee, *The Seaway Story*, 208.

the Canadian Department of Transportation, without compensation. However, through the Sheek Island Cottagers Association, the owners insisted on a moral right to be compensated for their loss, and many refused to move when asked. Their delegations appealed to Parliament, Ontario Hydro, and the Department of Transportation, and their protests won them a promise that they would be compensated or their cottages moved at public expense. This episode provides a useful foil to the experience of the Kahnawake. The cottage owners had no legal right to compensation for land they did not own, but their organization, means, and political influence secured undue remuneration. Moreover, in contrast to the ambivalence felt by the Kahnawake, the Sheek Island Cottagers Association's president remarked that the expropriating agencies "have been wonderful."<sup>81</sup>

Although the Kahnawake reluctantly made peace with the Seaway Authority's plans, they undoubtedly fared better than their Mohawk neighbors upstream. The unique geographic and political position of the St. Regis/Akwesasne Reserve meant five separate political entities impinged on their lives. The Reserve straddles the United States-Canadian border, as well as sub-federal boundaries between New York, Ontario, and Quebec. It is truly a transnational-transboundary space, claimed by three nations, and divided by least six political jurisdictions. For expediency, the Band maintained two separate administrative structures, one at Hogansburg, NY to deal with the American authorities, and one on Cornwall Island to deal with their Canadian counterparts. However, the members of the Band considered themselves one people and not bound by the Canadian-American border. As one Mohawk attorney described it: "That border was

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<sup>81</sup> Ibid., 209.

made by white people... It has nothing to do with us.”<sup>82</sup> Despite that sentiment, the border has played an important role in the movement of Mohawks and their interactions with outside communities.

Ostensibly, the land acquisition on the St. Regis Reserve should have been a simpler task in comparison with their downstream Iroquois compatriots. Only 86 acres from Raquette Point and a few homes would be sacrificed for Seaway construction and the rerouting of New York State Highway 37. However, two factors complicated the expropriation process. The Seaway Authority acquired 130 acres of Cornwall Island for the approaches to the new high-level Cornwall-Massena Bridge, and the Akwesasne claimed Barnhart Island, taken by PASNY.

The Development Corporation and Army Corps of Engineers required the 86 acres from Raquette point for the navigation channel downstream from Big-Mo. However, the Corporation and Corps could not expropriate land in New York courts because Native lands are held by treaty with the federal government, and they worried that federal courts might be unsympathetic to their expropriation petitions. They also worried that a tough approach to negotiations might amplify the project’s bad publicity. Direct negotiations began in late 1955 and dragged on until January 1957 before the parties reached a settlement. The agreement did not completely assuage the concerns of either party, and had to be finessed over subsequent meetings; but the settlement was timely, because the Corps had scheduled the bid tendering for work in this area to begin on January 22, 1957.<sup>83</sup>

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<sup>82</sup> Quoted in: “To the Mohawk Nation, Boundaries Do Not Exist,” *New York Times*, April 13, 1984, A2.

<sup>83</sup> Becker, *From the Atlantic to the Great Lakes*, 52-53.

The controversy over the expropriation of 130 acres on Cornwall Island began over a decade before the Seaway project began. In 1941, Corps surveyors arrived without Band permission to survey possible Seaway routes. Ernest Benedict, a Mohawk resident of the Island, wrote the ACLU in 1941, claiming that he had seen an “advance-publicity map” for a project that would dig a canal “through the middle of an island that is part of our reservation,” he added, “[t]here is no mention of the fact that this was a reservation or of how the land was to be obtained.”<sup>84</sup> Planners dropped the idea of a canal through Cornwall Island from later proposals, but the surreptitious nature of the survey raised the suspicions of the Akwesasne.

The Canadian federal department responsible for Indian Affairs endorsed the Authority’s proposal to expropriate the acreage on Cornwall Island, and the Governor General signed off on the scheme without parliamentary debate in November 1956. Negotiations made no mention of facilities that accompanied the bridge approaches – such as tollgates, a customs house, garages, and offices; by the time the Authority finished the approaches and the Seaway had opened, John Sharrow, the elected Band chief on the Canadian side, threatened to shut down Cornwall Island traffic over these additional impositions. In September 1959, Sharrow demanded \$45,000, in advance, for three years rent for the bridge approaches and the half-mile road that traversed the Island. He provocatively asserted: “We mean business. If we don’t get our money, we’ll block off the road to traffic. It’s our road and we can do what we want with it.” Within three

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<sup>84</sup> Taken from an oral interview conducted with Ernest Benedict, Akwesasne Reservation, September 10-11, 1983, by Laurence M. Hauptman. See: Hauptman, *The Iroquois Struggle for Survival*, 144, 270.

weeks, the Authority acceded to the Akwesasne demands, but only after the Band threatened to collect 50¢ from all drivers using *their* road after October 14, 1959.<sup>85</sup>

Although the settlement temporarily abated the dispute, it continued to fester. The tactic of threatening to impede traffic became a central component of the Mohawk's protest arsenal. For example, in protest of customs duties imposed on goods moved by Natives traversing the border, the Akwesasne shut down the Cornwall-Massena International Bridge.<sup>86</sup> In both 1968 and 1969, they parked cars on the roadway, deflated their tires, and physically blocked tow-trucks. On the former occasion, federal and provincial police arrested 41 Mohawks involved with blockade. Eventually, they won the right to move goods across the border duty-free. This success led to the continued use of these tactics by Mohawks up and down the St. Lawrence, culminating in the infamous "Oka Crisis" – when Mohawks blockaded Montreal's Mercier Bridge in July and August 1990, and engaged in an occasionally violent standoff with federal and state security forces.<sup>87</sup> These incidents also directly led to the founding of the newspaper *Akwesasne*

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<sup>85</sup> "Indians Seek \$45,000 as Rent from Seaway," *New York Times*, September 30, 1959, 23; "Indians to Lease Road Again," *New York Times*, October 10, 1959, 19. Also see: Hauptman, *The Iroquois Struggle for Survival*, 147.

<sup>86</sup> The bridge has since been renamed the "Seaway International Bridge;" and, in 2000, the whole border crossing including all bridge spans was renamed "Three Nations Crossing" in recognition of the Akwesasne. A small gesture that shows how their struggle for national recognition has advanced.

<sup>87</sup> For the details of these protests, see the following newspaper articles: "Canadian Indian Loses Fight Against Tariff" *New York Times*, June 12, 1956, 14; "Indians Define Problems," *Massena Observer*, December 17, 1968, 1; "Indians to Seek MP, Threaten Blockade," *Cornwall Daily Standard-Freeholder*, December 16, 1968; "Red Faces for Palefaces," *Ottawa Citizen*, December 20, 1968; "Chiefs from Six Nations Meet; Discuss Duty Problems with Canadian Customs," *Watertown Daily Times*, December 20, 1968; "41 Mohawks Seized in Protest at Border Bridge," *New York Times*, December 19, 1968, 16; "Indians and Canada Report Accord in Customs Dispute," *New York Times*, December 21, 1968, 47; and "Canada is Seeking a Mohawk Accord," *New York Times*, December 22, 1968, 17. Also see: Hauptman, *The Iroquois Struggle for Survival*, 148-149.

*Notes*, an Iroquois mouthpiece that influenced the political agenda and resistance tactics of First Nation peoples throughout the United States and Canada.<sup>88</sup>

The Akwesasne met a determined foe in Robert Moses. I have previously discussed Moses as the high-modern ethos embodied in a 20<sup>th</sup> century American context, and the Seaway project provided another outlet for that impulse. Moses claimed to have maintained a “direct and active interest in the Niagara Frontier and St. Lawrence River areas since 1924.”<sup>89</sup> Moreover, there is evidence that apiece of his interest in large-scale regional planning, Moses had his eye on Iroquois lands since at least 1946.<sup>90</sup>

Characteristically, Moses’ ambition and plans narrowed the range of considerations and voices given input. This focus and broad power to reshape New York’s landscape led Robert Caro to describe Moses as “comparable only to some elemental force of nature.”<sup>91</sup> In the case of the St. Lawrence, the force of Moses met the force of the river and helped to shape an envirotechnical system. In the case of the Akwesasne, their interests, claims, and protestations met with Moses’ equally forceful disdain.

By now, it should come as no surprise that Robert Moses lacked cultural sensitivity, and had few qualms about dispossessing Native peoples. In PASNY’s case, the debate centered on competing land claims to Barnhart Island. The Island is crucial to the power project’s design – Big-Mo made its American landfall on the Island’s eastern

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<sup>88</sup> Jerry Gambill (Rarihokwats) founded the newspaper *Akwesasne Notes* at Ernest Benedict’s home. It consolidated two earlier publications, one called *Akwesasne News*, that was founded directly in response to the Bridge crises. It was eventually replaced by a publication called *Indian Time*. A limited back catalogue of this paper is available at: *New York State Historical Newspapers Website*, accessed February 18, 2014, <http://nyshistoricnewspapers.org>.

<sup>89</sup> This quote is taken from Moses’ autobiography. Robert Moses, *Working for the People* (New York: Harper, 1956), 167.

<sup>90</sup> This is evidenced by Moses’ surreptitious participation with the Chapin Plan, which sought to remove the Iroquois from the Allegheny Reserve, for flood control and recreation purposes. See: Hauptman, *The Iroquois Struggle for Survival*, 139-140.

<sup>91</sup> Caro, *The Power Broker*, 830.

end, and Moses planned to turn the whole Island into a State Park linked to a rerouted NYS Highway 37. However, the Akwesasne claimed Barnhart Island as part of their traditional lands, and fought Moses for compensation. Moses glibly expressed his derision for the Akwesasne claim, stating: “This job has its humor. In addition to those who supervise the supervisors, execute the executives and watch the watchmen, we have to deal with St. Regis Indians, who ask the tidy little sum of \$34 million for their pre-Revolutionary interest in Barnhart Island,” and he caustically added that these “are merely little incidents that brighten our days.”<sup>92</sup>

Moses’ dismissal of the Native’s claim, as just one more in a series of impediments, reflects his general condescension toward those he deemed obstructions to progress. However, the claim was hardly an incidental issue to the Akwesasne and received a great deal of attention at Band meetings. In 1956, the Band filed a lawsuit against the State of New York, demanding \$33.8 million for their loss of the Island and use of adjacent waters. The resulting case – *St. Regis Tribe v. State of New York* – began in January 1956.<sup>93</sup> The case turned on a complicated review of treaties concluded in the 18<sup>th</sup> and 19<sup>th</sup> centuries as well as the shifting boundary between the United States and Canada, which saw Barnhart Island change hands in an 1822 land-swap. Although an 1856 legislative act by the New York Assembly seemed to affirm that Barnhart Island belonged to the St. Regis Reserve, it also carried a payment of \$5,960 to the “Tribe” for said island. In the end, the case turned on a single point – if New York paid this money

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<sup>92</sup> Moses, *Working for the People*, 186.

<sup>93</sup> “Indians Sue for \$33.8 Million, Claim Power Project Site Belongs to Them,” November 20, 1956(?), SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 1, Folder 2, “Clippings.” “St. Regis Court Suit Will Begin on Jan. 4,” December 22, 1956(?), SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 1, Folder 1, “Clippings.” The clippings have no publication information, and the years are not clear, but similar articles found in the *New York Times* indicate that the case was initiated in 1956, for example: “Indians Press Claim to Isle,” *New York Times*, March 27, 1956, 20; and “Tribe’s Power Claim Argued,” *New York Times*, April 17, 1956, 22.

to acquire new Native lands, it would be a violation of federal law (specifically the Intercourse Acts of 1790 and 1793). However, the New York Court of Appeals' presiding judge decided that the 1856 Act did not represent a new purchase, but an adjustment of an existing claim that arose from ambiguous language in the original 1796 treaty with the Iroquois Nations.<sup>94</sup>

With this ruling, the Akwesasne suffered a major legal defeat and lost their claim to Barnhart Island. This setback, like those suffered by the Kahnawake and on Cornwall Island, precipitated a level of frustration and inspired acts of resistance. In August 1957, about 200 Akwesasne, led by Francis Johnson (Standing Arrow), a 24-year old ironworker, occupied a piece of State land south of Adirondack Park, where Schoharie Creek meets the Mohawk River. Protesting the coming of the Seaway and its planners' treatment of Native peoples, Standing Arrow boldly predicted "more than 2,000 Indians from reservations in Quebec, at Caughnawaga, Oka, and St. Regis, their life changed by the St. Lawrence Seaway," would join his group in the occupation of their ancestral lands in the Mohawk Valley. This movement dispersed when evicted by a court in March 1958, but like their bridge blockading Akwesasne successors, they were harbingers of an increasingly militant Iroquois community.<sup>95</sup>

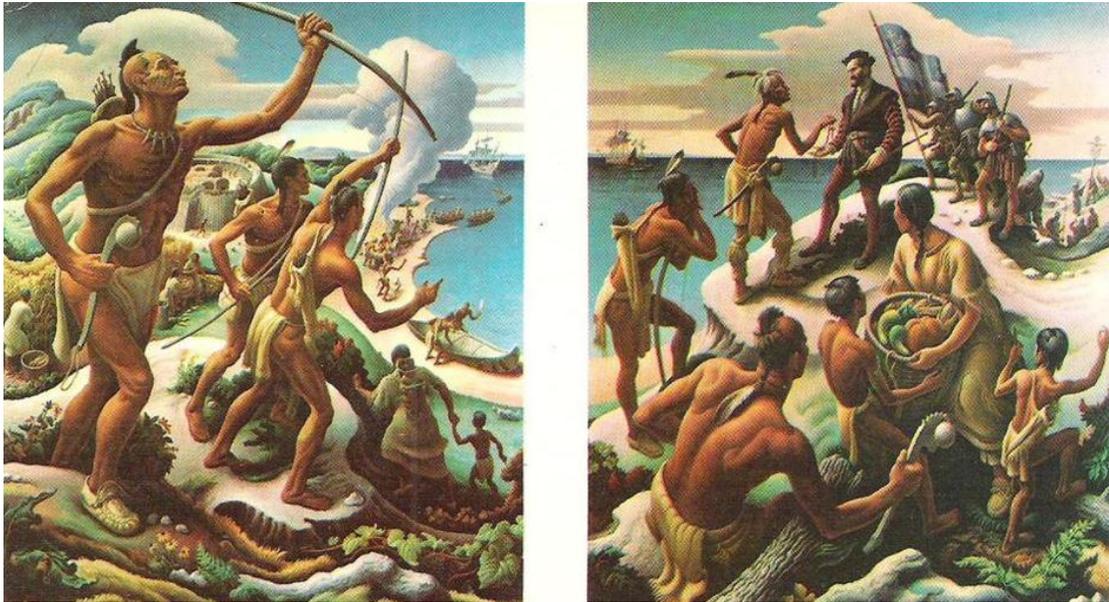
Adding insult to injury, Moses commissioned the regionalist artist, Thomas Hart Benton, to paint a controversial mural for the visitors' center at the Barnhart power

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<sup>94</sup> The rulings and opinions can be found in: *St. Regis Tribe of Indians v. State of New York* – 5 N.Y. 2d24, 177 N.Y.S. 2d 289 (1958); also see: "Indians Lose Suit," *New York Times*, December 20, 1957, 23; and Hauptman, *The Iroquois Struggle for Survival*, 146. Native author and activist Douglas George wrote an excellent summary of the legal issues and NY Court of Appeals decision in 1983, see: Douglas George, "Barnhart Island," *Indian Time*, Vol.1, No.1 (July 1, 1983), 6-7.

<sup>95</sup> A description of this incident can be found in: Wilson, *Apologies to the Iroquois*, 39-57; also see Hauptman, *The Iroquois Struggle for Survival*, 149-150.

station. Entitled *Expedition of Jacques Cartier*, this mural depicts the explorer's arrival at a fortified Native village in the 16<sup>th</sup> century.



Thomas Hart Benton, *Expedition of Jacques Cartier*, 1957<sup>96</sup>

It is impossible to know the subtext of the work or artistic intent. Nevertheless, given Moses' dismissal of First Nation claims and the absolute prioritization of his plans over Native concerns, the mural seems patronizing at best. Perhaps it is representative of Moses' self-styled image that he was a benevolent civilizing force on the frontiers of northern New York, including Akwesasne lands.

The project did more than dispossess certain members of the Band; it fundamentally altered their spatial lives and activities along the river. Seaway planners sought to transform the St. Lawrence into an industrial space for the production of goods and power, as well as the movement of commodities. The attendant pollution and hydrologic changes weakened Native self-sufficiency and virtually destroyed the fishing and dairy industries that sustained the community. The project simultaneously divided

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<sup>96</sup> Postcard in possession of the author, n.d.

and coalesced the First Nations communities. It reinforced the national political divisions that bisected their reservation by imposing customs duties on the movement of goods. Like their non-Native community counterparts, it physically divided the reservations from familiar spaces on the river, inundated their traditional fishing spots, and erased physical landmarks that served as self and community identifiers. Seaway planners consistently sought to exploit internal divisions fomented within Mohawk communities about what constituted justice or fair compensation. Finally, it further divided the Iroquois from the societies that surrounded them. The Seaway served to reemphasize the truism that Native interests would be sacrificed to the competing interests of the national and regional communities that enveloped them. On this last front, the Iroquois coalesced in opposition. Frustrated with their inability to win in the courts, the Iroquois adopted more militant action to achieve their goals.

Although Moses, Chevrier, and the authorities they represented won their Seaway battles, the Seaway's confrontation with Native intransigency had just begun. In 1983, Douglas George, a Mohawk author and activist, proposed a series of actions to recoup the loss of Barnhart Island; and although his early initiatives proved futile, they eventually paid dividends. In 2008, Ontario Power Generation (OPG, formerly Ontario Hydro) reached a settlement with the Akwesasne to address grievances associated with the Seaway project. This agreement carried an official apology from the Utility, saying: "We did not inform you of or allow your input into the project; for this, we apologize... We didn't consider how the building would affect your way of life; for this, we apologize."<sup>97</sup> Jack Epp, OPG's chairman, further apologized for the displacement of Akwesasne

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<sup>97</sup> Michael Peeling, "OPG offers apology to Akwesasne," *Cornwall Daily Standard-Freeholder Website*, October 3, 2008, accessed February 18, 2014, <http://www.standard-freeholder.com/2008/10/03/opg-offers-apology-to-akwesasne>.

peoples, and for not providing alternative lands to those displaced. More concretely, the settlement carried financial compensation in the amount of about \$46 million, included land transfers to the Reserve on adjacent islands, enfranchised the Band in future decision-making, provided employment opportunities for Band members, as well as a voice and equal role in environment stewardship and mitigation strategies.<sup>98</sup>

On the American side, PAsNY (now the New York Power Authority – NYPA) requested a renewal of their license for the power plant on Barnhart Island in 2003. The Akwesasne objected to the relicensing on several grounds – including the illegal taking of their lands in the 1950s, and the environmental damage caused by the project. As a condition of the new license’s approval, the Federal Energy Regulatory Commission compelled the Power Authority to make several concessions and compensatory payments to the Akwesasne. The two parties finalized an agreement in February 2005. The settlement carried \$30 million in upfront compensation with additional payments of \$2 million per annum for the next 35-years (a total of \$100 million). It also included the transfer of designated adjacent lands and the option to purchase more lands with the monies received, as well as nine megawatts of the power generated at a preferential rate. Unlike the Canadian settlement, it did not carry an apology or an independent Mohawk voice in future decision-making or local environmental policy. Moreover, the Akwesasne forfeited the right to make any future land or monetary claims.<sup>99</sup>

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<sup>98</sup> Figure in CDN dollars. “OPG and MCA to sign final settlement: OPG Apologizes to Akwesasne,” *Indian Time Website*, October 2, 2008, accessed February 18, 2014, <http://www.indiantime.net/story/2008/10/02/news/opg-and-mca-to-sign-final-settlement-agreement/101.html>.

<sup>99</sup> Figures in USD. United States, Federal Energy and Regulatory Commission, *Order Approving Settlement Agreements, Dismissing Complaint, and Issuing New License*, October 23, 2003, *Federal Energy and Regulatory Website*, accessed February 18, 2014, <http://www.ferc.gov/whats-new/comm-meet/102203/H-1.pdf>; “Agreement of Settlement and Compromise to Resolve the Akwesasne Mohawk Title and Trespass Claims With Respect to Lands Situated in the State of New York, February 1, 2005,”

These recent events ameliorated some of the resentment engendered by the Seaway project among adjacent Native communities, and, on the Canadian side, took steps to provide Mohawks with a participatory role in environmental decision-making and crafted a collaborative process to determine the river and its environs' future. The settlements and the compensation they carried are recompense for the singular pursuit of the Seaway planners' conviction that nothing would stand in the way of this great bi-national undertaking. They refused to consider Natives' unique cultural and historical position, their traditions and patterns of daily spatial practice, or the treaties that guaranteed their remaining land in perpetuity.

*Looking Toward the Future, Begging for the Past*

On the Canadian mainland, as the land acquisition process waned, villages adjacent to the St. Lawrence awaited Ontario Hydro's plans for their new towns. More than a decade earlier, in 1943, Norman Wilson wrote a report outlining possible alternatives for the rehabilitation of affected communities. Wilson called for new towns with all new "modern" homes, and claimed that few of the existing houses "would be sufficiently modern and have sufficient value to warrant their removal intact to the new site." Moreover, he argued, "in keeping with the great ultra modern engineering work of which their removal is a necessary part," the new communities should reflect the modern aesthetic and values associated with the larger project.<sup>100</sup>

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*Indian Law Resource Center Website*, accessed February 18, 2014, <http://www.indianlaw.org/sites/default/files/resources/MohawkAgreement200502.pdf>.

<sup>100</sup> Norman D. Wilson, "Factors in the Rehabilitation of "Seaway Communities Partially or Wholly Inundated in the Development for Power and Navigation of the International Section of the St. Lawrence River, 1943," 31, 34, SLU, *Seaway Collection*, Collection No. 40, Mabee Series, Box 71, Folder 5, "Factors in the Rehabilitation."

This notion of modernity and its accompanying values continued to underscore Hydro's vision of the rehabilitation process. Like the envirotechnical system they constructed in the waterway, they remade adjacent towns in the project's image. The villagers desired a replacement of the spaces they lost, including a waterfront and immediate proximity to the river, but the Utility's plans reflected a different set of priorities. Hydro presented its rehabilitation plans in August 1954 to the affected communities.<sup>101</sup> The plans evinced a minimalist approach that incorporated features consistent with contemporary trends in city planning – looped streets to minimize traffic hazards, small-standardized houses arranged in tracts that evoked suburban subdivisions, and a central shopping center. Joy Parr argues that the modernist approach deployed in these plans had been framed for the metropolis, and could not be easily scaled down for small communities.<sup>102</sup> These mismatches in scale and vision are central to this chapter. Seaway planners viewed the Seaway through a bi-national prism, and typically eschewed consultation or assessment at the local level.

Their plans solved imaginary problems – the looped streets mitigated nonexistent traffic problems, most residents preferred their distinctive old homes to new small-standardized houses, and the construction of a shopping center with ample parking – a sort of miniaturization of urban commercial spaces – fundamentally misunderstand what residents prized in the socially interactive spaces of “Main Street.” If the ethos of modernism is that form should follow function, the planners transgressed their own

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<sup>101</sup> “Proposals For Rehabilitation of Communities Affected By St. Lawrence Power Project,” Joint Statement by Robert H. Saunders, Chairman, Ontario Hydro, and William K. Warrender, Minister of Planning & Development, Province of Ontario, August 1954, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 68, Folder 5, “Ontario Hydro and the St. Lawrence Power Project.”

<sup>102</sup> Parr, *Sensing Changes*, 94-95.

axiom, and, as Parr argued, the new Seaway villages “perpetrated an ill-chosen form that eroded healthy and happy socially generative practices.”<sup>103</sup>

Hydro planned to basically replicate the “ideal” Seaway community at four locations, forming three entirely new towns – new Iroquois, Long Sault, and Ingleside – and constructing a new section of Morrisburg to replace the portion lost to the Seaway’s floodwaters.<sup>104</sup> For the most part, the villagers did not passively accept Hydro’s plans and fought to influence the spatial arrangements and character of their new communities. In 1952, two years before the Seaway project, the village of Iroquois hoped to secure a voice in their imminent relocation by enlisting Wells Coates, an eminent British architect and planner, to design a new townsite consistent with local needs. Coates selected a site on nearby Flagg Creek – about two miles northeast of the old village – because of its mixed topography. He believed its flat lands would serve industry, its heights would provide stunning views of the St. Lawrence, and the creek could be fashioned into a harbor.<sup>105</sup> Coates’ long-term plan also included enticing British manufacturers to the site, and thereby expanding the community’s industrial base. Hydro objected to Coates’ plan on three fronts. First, in order to construct the new community at the proposed site, an unwilling Matilda Township would have to cede the necessary lands. Second, Hydro’s engineers questioned the feasibility of constructing a harbor at Flagg Creek in light of

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<sup>103</sup> Ibid., 95.

<sup>104</sup> There was a significant amount of debate on the name chosen for the last of these towns. Ingleside was originally going to be called “Avondale;” the name Ingleside was chosen in 1956, two years into the planning process. See: “Avondale, Long Sault Names of New Seaway Valley Towns,” *Cornwall Daily Standard-Freeholder*, June 29, 1955, 8, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers;” “Ingleside Chosen for Town’s Name,” *Massena Observer*, October 22, 1956, 20; “How Town of Ingleside Got its Name,” *Cornwall Daily Standard-Freeholder*, June 28, 1958, 8, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers.”

<sup>105</sup> For a description of Coates plans, see: Laura Cohn, *The Door to a Secret Room: A Portrait of Wells Coates* (London: Ashgate Publishers, 1999), 200.

their experiences with the marine clay found at its mouth. Finally, British manufacturing seemed uninterested in occupying the space, and Hydro believed Coates' projections for industrial and demographic growth to be unrealistic. Consequently, Hydro advanced an alternative set of plans, and secured a reluctant agreement with Iroquois' municipal council by forcing their hand. The Utility struck a financial deal with the village's only major manufacturing concern – the Caldwell Linen Mill – to move its facilities north of their existing site to Hydro's proposed townsite. This move left the village's planners with little choice but to follow suit.<sup>106</sup> Coates objected to the lack of contextual consideration in Hydro's plans, saying: "Hydro's new Iroquois could be set down in the middle of the prairies," and he described the plans as "pedestrian in approach and suburbanite in concept," conceived apart from "any contact with the lands or the people."<sup>107</sup>

Coates' comment nicely encapsulates the crux of the disconnect between the vision of planners and desires of locals. Hydro's new Iroquois seemed to be conceived in a vacuum, free of site-specific context or any consideration of local spatial and social practices. Iroquois lost the battle with Hydro on site-selection, but it would continue to fight for a participatory role in determining the organization and composition of their new community.

Of the four new communities constructed by Hydro, the people of Long Sault (formerly Moulinette and Mille Roches) exercised the least influence and participation in

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<sup>106</sup> "Iroquois, Matilda Twp. Differ on Rehab Plans," *Cornwall Daily Standard-Freeholder*, September 15, 1954, 3; "Officials Blast Hydro Rehab Plans," *Cornwall Daily Standard-Freeholder*, August 21, 1954, 1; Also see: Cohn, *The Door to a Secret Room*, 202-204; Parr, *Sensing Changes*, 86-87; and Mabee, *The Seaway Story*, 214.

<sup>107</sup> The first quote is taken from: "Hydro Plan Disappoints Iroquois," *Cornwall Daily Standard-Freeholder*, August 18, 1954, 1. The following quotes are taken from: "Coates Says Hydro Plan 'Inexcusable,'" *Cornwall Daily Standard-Freeholder*, August 21, 1954, 1.

the planning process. These residents had no direct representation on the municipal entities designated to oversee their planning and development – Cornwall Township’s Council and Planning Board. The elected chairman of this Planning Board, Dr. J.A. Phillips, believed that his role consisted of convincing the residents of Moulinette and Mille Roches of the Hydro plan’s advantages. Without a distinct voice in the rehabilitation process, the objections of Long Sault’s future residents received little attention.<sup>108</sup> In a sense, these communities suffered a dual indignity – dispossession and disenfranchisement in the process.

At the other end of the spectrum, the people of Morrisburg looked contemptuously on what they saw as the capitulation of Iroquois and Long Sault to Ontario Hydro’s bullying tactics. The citizens of Morrisburg actively confronted Ontario Hydro and demanded a voice in their rehabilitation process. When the details of Hydro’s plans for the new section of their village broke, residents dismayingly found that the new section would be constructed to the east, rather than west of the existing townsite as they anticipated.<sup>109</sup> Citizens also protested the lack of basic information emanating from Hydro, including: how much land would be flooded, and where highways and railroads would be relocated. How could they make informed choices without these basic details, they objected.

In the spring of 1955, the Morrisburg and Williamsburg Planning Board met with their institutional counterparts in Massena to see how they successfully engaged with

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<sup>108</sup> Mabee, *The Seaway Story*, 215.

<sup>109</sup> Residents thought the new section would be on the west side to take advantage of sites that seemed to provide space for a harbor, etc. “Rehab Plans Bring Protest at Morrisburg,” “Inundation Edition: A Historical Issue Tracing the Conception and Progress of the Giant Project,” *Cornwall Daily Standard-Freeholder*, June 28, 1958, 9, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers.”

Seaway planners and secured a role in the planning process.<sup>110</sup> The Massena Village Planning Commission had created a range of volunteer committees to solicit public feedback and incorporate a wide range of citizens' voices and concerns in their plans. Convinced by their Massena analog's program, the Morrisburg Planning Board emulated its approach and sought to enlist the widest network of people into their plans.<sup>111</sup>

The Morrisburg Planning Board invited each of the 35 established community organizations to send two representatives to a planning meeting. 60 delegates, including some of the most vociferous dissenters, arrived and collaboratively set up a series of planning committees, each with the power to indefinitely expand its membership.<sup>112</sup> The committees went to work, recruiting participants and soliciting community input. They quickly realized the immense difficulty involved in community planning, especially with such a wide diversity of inputs. They also continued to have difficulty in obtaining clear information from Hydro officials. The volunteer committees tackled issues of all sizes, participants became better informed about the planning process, and Hydro eventually clarified and articulated their plans. Slowly, the process fostered a sense of cooperative planning and engagement. In the end, the residents accepted much of Hydro's proposal with only slight modifications. However, with direct participation and substantive input,

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<sup>110</sup> Correspondence from Alan Thomas, Former Resident of Morrisburg to Carleton Mabee, March 7, 1956 [Concerning citizen involvement in the planning process for the Seaway], SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 71, Folder 12, "Correspondence." Also, see: Mabee, *The Seaway Story*, 215-216.

<sup>111</sup> "Massena's Future Guided by Master Plan prepared by Planning Commission After Hours of Work by Volunteer Committees," *Massena Observer*, August 8, 1955, 1; Massena Village Planning Commission, "Requirements for the Approval of Sub-Division Plans in the Village of Massena, New York," [n.d.], 23 pages, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 59, Folder 9, "Planning in the Massena, New York Area;" Massena Village Planning Commission, "Massena Master Plan: Report to the Town and Village of Massena," Thomas W. Mackesey, of Sargent, Webster, Creshaw and Folley, Consultants, 1958, 128 pages, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 59, Folder 9, "Planning in the Massena, New York Area."

<sup>112</sup> Described in: Correspondence from Alan Thomas, Former Resident of Morrisburg to Carleton Mabee, March 7, 1956 [Concerning citizen involvement in the planning process for the Seaway], SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 71, Folder 12, "Correspondence."

many came to feel that the new town would really be *theirs* – participation engendered a sense of ownership and stewardship over the new town.

Morrisburg presents the best face of the rehabilitation planning process. Locals engaged themselves in the process and fought for a voice in determining its outcome. It provides a useful counterpoint to experiences of Iroquois, Long Sault, and Ingleside. Carleton Mabee attributed Morrisburg's success to its residents' commitment to Athenian style democracy, but other factors may have been at play.<sup>113</sup> Unlike the other communities, Morrisburg only lost a portion of its area – the spaces below Old Highway 2 – to the Seaway flood. Much of the community remained intact, its spaces preserved, and its connection to the river sustained. Moreover, buoyed by a dynamic tourism sector, Morrisburg was the only “lost village” to experience any economic and demographic growth in the decades leading up to the Seaway project.<sup>114</sup> These factors, along with the in-town placement of Ontario Hydro's Rehabilitation Office and St. Lawrence Review Board, as well as the engagement of widespread citizen participation, facilitated a more cooperative approach to the rehabilitation process.<sup>115</sup>

Although Morrisburg participated in the process, in the end, no one got the exact community they wanted. Hydro planners and residents all made concessions and the communities represented a patchwork of compromises. The new community of Ingleside (formerly Wales, Aultsville, Dickenson's Landing, and Farran's Point) prided themselves on looking least like Hydro's plans, but the distinctions they pointed to were modest.

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<sup>113</sup> Mabee, *The Seaway Story*, 215.

<sup>114</sup> Much this growth appears to have been seasonal, especially in the form of cottage owners, who do not show up in census data and do not vote in municipal elections. However, it gave Morrisburg a more resilient economy than its lost village counterparts. For demographic information, see: Canada, Dominion Bureau of Statistics, *Ninth Census of Canada, 1951*, Vol.1, Table 6, (Ottawa: E. Cloutier, 1953).

<sup>115</sup> “Rehab Office at Morrisburg,” *Cornwall Daily Standard-Freeholder*, June 28, 1955, 31, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers.”

The communities all lost site-location battles, but won a major victory on the housing front. Many residents insisted on moving their old unique houses to the new sites, instead of purchasing Hydro's new, small, and modern alternatives. On this significant point the Utility conceded. In June 1955, Hydro issued a press release stating that they would move homes without cost to the owner to new lots, pay a 15 percent bonus on their expropriation value for the inconvenience, offer landscaping services for the new lots, attach the homes to modern sewage and electric systems, and do minor carpentry or masonry work as needed.<sup>116</sup> Not everyone chose this option, but Hydro moved 531 homes along with several Victorian era churches, contributing to the patchwork texture of the communities that arose beyond the waters' reach. In fact, Hydro eventually encouraged the decision to move existing homes over the construction of new ones. Once the house-moving program picked up momentum, it saved the Utility time and material costs over constructing entirely new residences.

By the summer of 1955, Hydro contractors dug, bulldozed, and dynamited to transform the new townsites from bucolic meadows into a "hell of raw earth and deep ditches."<sup>117</sup> As the machines transformed the countryside, residents scrambled to secure lots. Hydro gave preferential spaces to those who lived alongside the river; but now, they typically received a lot adjacent to a park. Some people's central concern was to keep the same neighbors, once again grasping at a social semblance of the spaces left behind.

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<sup>116</sup> For Ontario Hydro's agreement to move old houses, see: "Hydroelectric Power Commission of Ontario, Press Release, June 17, 1955," SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 69, Folder 1, "Ontario Hydro, Press Releases – 1955."

<sup>117</sup> The scene evokes Adam Rome's *Bulldozer in the Countryside*, but modifies it to reveal the construction of suburban communities without an urban center. See: Adam Rome, *Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (Cambridge: Cambridge University Press, 2001). For the in-text quote, see: Mabee, *The Seaway Story*, 212.

With the lots consigned, the land acquired, and the rehabilitation plans laid, the villages began the herculean task of moving.

Beginning in August 1955, Iroquois was the first to move, and the other villages followed shortly thereafter. A sign seen when entering Iroquois along old Highway 2 declared: “WE HAVE TO GO, BUT WATCH US GROW.”<sup>118</sup> However, to many in Iroquois, the promise of growth already seemed illusory. Despite grandiose promises made by Ontario Hydro, Wells Coates, and a half-century of Seaway enthusiasts, Iroquois looked more like a retirement community than a space of latent industrial power. In a sense, the first half of the slogan rang truer than the second. It reaffirmed the power of distant bureaucracies to physically separate them from their river in the name of bi-national progress, but attendant promises of local growth couched in these same terms rang hollow on the ground.

Seaway planners sought to remake these communities in the project’s image; and they did, but not in manner they envisioned. The villages, like the project, represent an amalgam of values and constituents. The Seaway system is not exclusively technological, nor environmental, but a complex amalgam of both that integrates political, economic, and cultural forces. It is both real and imagined. The old river never disappeared, but planners fashioned it into a new envirotechnical system. Similarly, the “lost villages” are not entirely lost. The new, suburban-style plans did not thoroughly erase the old villages; Seaway planners transformed them, but not quite beyond recognition. In the end, the remade villages evinced a complex, often competing set of values, practices and aesthetics. Their physical arrangement evokes a style that suggests

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<sup>118</sup> A photo of this sign is available at: “Iroquois,” *Lost Villages Historical Society Website*, accessed April 18, 2014, <http://lostvillages.ca/history/the-lost-villages/iroquois/>.

progress and modernity; but the aesthetic of Victorian homes on suburban plots appears incongruous, suggesting a complicated mix that includes elements of nostalgia and tradition. The new did not wholly subsume the old, and the project modified, but did not destroy. The villages and river embody historical continuity, into which Seaway's arrival represented a significant disruption but not a holistic disjuncture.

### *Moving Days*

While some residents deliberated their choices of plots and home options, Ontario Hydro's workers began to change the face of their townscapes. They cut down telephone and electrical poles, and uprooted the trees that populated the river's edge. Anything that could obstruct navigation had to go. For many locals, the loss of their trees was especially jarring, particularly the old maples. One young Seaway contractor remembered an old man from Iroquois asking: "I don't mind moving and so and so and so on... But what price do you put on trees? ... I'll never get to see my trees again."<sup>119</sup> Another local man asked Hydro workers to transplant a small tree he had planted a decade earlier; when they refused, he could not bear to watch it cut down, so he went inside and shut his door.<sup>120</sup> These anecdotes reflect the ineffable, unquantifiable price locals paid for the Seaway. Concurrently, at the new townsites, workers laid water, sewer, and electrical lines, surveyed and leveled lots, excavated basements and laid foundations. As workers raised one site, they razed another.

Hydro moved their first house in August 1955, their last in December 1957, and 529 in the intervening period. To complete this formidable task Hydro enlisted the

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<sup>119</sup> Quoted from an interview with Les Cruickshank an equipment operator for Ontario Hydro and later a small independent contractor, conducted on April 7, 2000, found in: Parr, *Sensing Changes*, 91, 220 (Fn57).

<sup>120</sup> Mabee, *The Seaway Story*, 212.

services of William Hartshorne and his two colossal house-movers from New Jersey. Bob Saunders allegedly first saw Hartshorne's innovative machines in an eight-millimeter promotional film, and proclaimed that it was the most incredible invention he had ever seen.<sup>121</sup> Saunders promptly contracted Hartshorne to deploy his equipment on the Seaway relocation project.

The house-movers, which had ten-foot tires and arms that could wrap around a house to lift it off its foundation, became an envirotechnical spectacle themselves.<sup>122</sup> Hydro workers constructed a massive road from old to new communities for the house-movers to travel, and detached the structure of homes from their foundations in preparation to move. One Canadian television network filmed the process of an Iroquois house being transported for a documentary broadcast. The broadcast claimed it took only forty-five minutes to move the house – fifteen minutes to lift it off the foundation, fifteen to transport it to the new site, and fifteen to set it down and hook all the services up. “[I]t made for good television,” Glen Dafoe, one of the carpenters featured in the program recalled, but he added that, it did not “actually happen that way on a day-to-day basis.”<sup>123</sup> The televised move showed the Roberts Family finishing their breakfast when one of Hartshorne's giant house-movers arrived on their doorstep. The residents left without packing any of their things, leaving their dishes in the cupboards, pictures on the wall, and lamps on the table. Bill Hartshorne himself directed the mover's controls, backing it

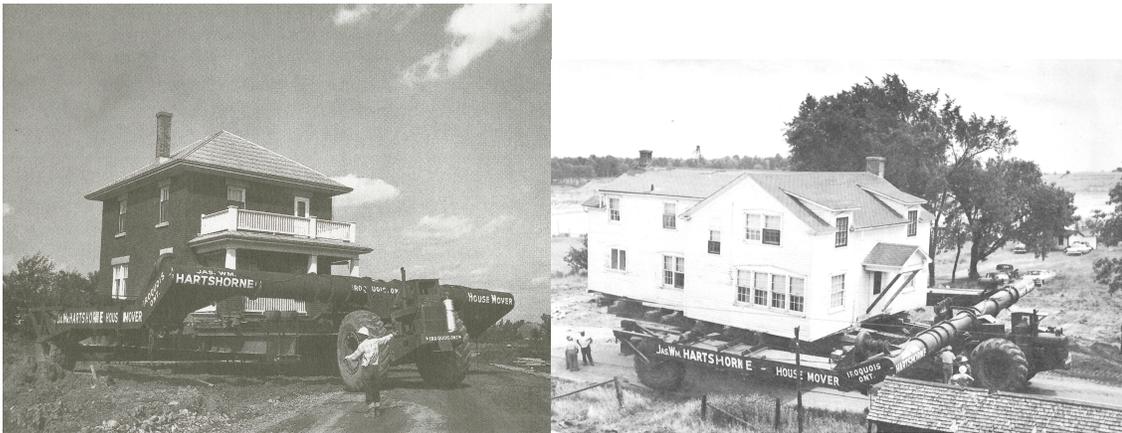
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<sup>121</sup> Paraphrased from the transcript of an interview with Les Cruickshank. Claire Parham and Joy Parr both interviewed him. See: Parham, *The St. Lawrence Seaway and Power Project*, 68.

<sup>122</sup> “House-mover Sensation in Valley,” “Inundation Edition: An Historical Issue Tracing the Development and Progress of the Giant Project,” *Cornwall Daily Standard-Freeholder*, June 28, 1958, 4, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers,” Alex Mullin, “Big Housemovers are Prime Drawing Card,” *Cornwall Daily Standard-Freeholder*, June 29, 1957, 23, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, “Canadian Newspapers.”

<sup>123</sup> Interview with Glen Dafoe, a carpenter for Ontario Hydro during the rehabilitation process, see: Parham, *The St. Lawrence Seaway and Power Project*, 151-152.

up so its giant steel arms embraced the house. Workers then quickly connected steel cables to the house's beam frame, and gently the machine's hydraulic action lifted the frame off its foundation. The mover then slowly drove a mile north to the new townsite, backed deliberately over a new foundation, and set the house down onto its new cement-block cellar walls. Workers then hurriedly connected the home to the power, telephone, as well as water and sewage networks. As millions later watched during the documentary broadcast, the Robertses had breakfast in old Iroquois, and an hour later served tea from their old home in new Iroquois.



Photos of House-movers, Ontario Power Generation ©<sup>124</sup>

However, like the vision of Seaway planners, the television cameras' lenses masked a more complicated reality. The program had a script, atypical manpower, and a great deal of preparatory work. In fact, Glen Dafoe remembered working all weekend to get the selected house for the broadcast ready to move. The television program also neglected to mention that the Hydro workers only fashioned temporary connections to the water and sewage networks, until permanent ones could be made. In fact, the televised

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<sup>124</sup> First photo was taken by Ontario Hydro Photographers in Morrisburg, ON and can be found in: SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 52, Folder 1, "Notes for Power and Impact on the Valley Chapters." The second photograph was also taken by Ontario Hydro photographers, but in Iroquois, ON; reproduced in: Jacques Lesstrang, *Seaway: The Untold Story of North America's Fourth Seacoast* (Seattle: Salisbury Press, 1976), 53.

relocated house initially received its drinking water by garden hose.<sup>125</sup> In reality, depending on the availability of tradesmen, the moving process could take several days. The program depicted Mr. Hartshorne's machines as technological marvels and fed a narrative of speedy and unobtrusive moving, but the reality on the ground told a slightly different story.

Over two and half years, Hydro and Hartshorne continued to move homes. They also moved two of the 23 churches in the project's path – Hydro workers moved Holy Trinity Anglican of Williamsburg stone by stone from its river adjacent site in the small hamlet of Riverside to a new site just east of Morrisburg; and they moved Christ Anglican, which had a wooden frame, wholesale to Upper Canada Village located between Morrisburg and Ingleside. Hydro constructed new sanctuaries for the other 21 congregations in the Seaway's way. Graveyards often accompanied churches and had to be moved as well. Holy Trinity's burial grounds included the final resting place of Sir James Whitney, Premier of Ontario and Seaway advocate; workers moved his grave and remains to the Church's new site. All told, Hydro moved about 6,000 tombstones, but very few bodies. According to Hydro's policy they only moved remains upon family request, and only about 20 percent made such a request. On the American side, PASNY moved only one church – the Louisville Landing Community Church – along with 600 headstones and the remains that accompanied them.<sup>126</sup> In the end, the Seaway's waters reburied the remains of about 4,800 people.

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<sup>125</sup> Parham, *The St. Lawrence Seaway and Power Project*, 151-152.

<sup>126</sup> "May Move headstones, Not Graves," *Cornwall Daily Standard-Freeholder*, June 28, 1955, 27, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers;" "Rules Against Mass Grave Location," "Inundation Edition: An Historical Issue Tracing the Conception and Progress of the Giant Project," *Cornwall Daily Standard-Freeholder*, June 28, 1958, 27, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers;" "Relocation of Cemeteries to Start Soon," *Cornwall Daily Standard-Freeholder*, July 10, 1956, 26, SLU,

Once Hartshorne's movers carried all the relocated homes down specially constructed roads, the structures that remained had to be destroyed to make way for the bottoms of ships. Seaway agencies put abandoned homes and workplaces up for bidding, and winning bidders raced looters to remove fixtures, plumbing, floorboards, and siding – they took anything with resale value. A series of conflagrations followed. Some began as training and research exercises for local fire departments.<sup>127</sup> Auction winners also set fire to buildings after they stripped their condemned properties. The conflagration consumed trees, haystacks, and the shells of buildings. Hydro workers dynamited the remains of an abandoned paper mill in Mille Roches, they toppled telephone and electrical poles, demolished wharfs, tore down miles of fencing, backfilled filled cellars and wells, and cut down innumerable trees. At Moulinette, near the old Cornwall Canal, workers cut down an Elm that locals claimed had been a sapling when Columbus first sailed toward the New World. During all this destruction, a team of archaeologists hurried their digging of 5,000 year old Native American artifacts on Sheek Island, architects made drawings of the six fireplaces in a resplendent manor at Moulinette before it helped feed fires' flames, and a local historical society appealed to Robert Moses to save Ogden Mansion, which had hosted dignitaries like President Monroe, for

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*Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers;" "Relocation of Cemetery Major Task," "Inundation Edition: An Historical Issue Tracing the Conception and Progress of the Giant Project," *Cornwall Daily Standard-Freeholder*, June 28, 1958, 11, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers;" "18 Cemeteries are Moved from Flood Area," "Inundation Edition: An Historical Issue Tracing the Conception and Progress of the Giant Project," *Cornwall Daily Standard-Freeholder*, June 28, 1958, 33, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers."

<sup>127</sup> "Burn Eight Buildings to Test Fire Action," "Inundation Edition: An Historical Issue Tracing the Conception and Progress of the Giant Project," *Cornwall Daily Standard-Freeholder*, June 28, 1958, 7, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76B, "Canadian Newspapers."

its historical value. When their appeals fell on Moses' deaf ears, they held a farewell ceremony on the Mansion's lilac encircled grounds on Ogden Island.<sup>128</sup>

Everyone's attention focused on Inundation Day – July 1, 1958. As the appointed hour approached, the reconstructed towns began to take form. The old townsites appeared flattened – an unsettling sight composed of roads that led nowhere and a hell-scape of scorched earth – like footprints of ghost towns. The effect on locals was clearly shattering. One first-hand observer remarked: “sometimes there was absolutely no relic of the past there any more, no bush, no sidewalk, nothing... It was devastating to know how completely the past, even the past of a few weeks before, could be wiped off the surface of the earth.”<sup>129</sup> When the explosions rang out on that fateful day, the deluge that followed covered the remnants of the local's embodied spaces, and the people they had been.

*There is no There, There?*

Gertrude Stein, referring to the redeveloped lands occupying the space of her childhood home in Oakland, California, famously said: “there is no there there.”<sup>130</sup> She fixed identity with place, evincing a painful nostalgia for a space that no longer existed and an identity lost. This simple turn of phrase captures a sentiment shared by residents of the recently termed Seaway Valley. As Seaway workers breached the cofferdams and the Valley began to flood, one man reportedly quietly remarked to his wife: “there goes our youth.”<sup>131</sup> The floodwaters radically transformed the landscape, redefining the

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<sup>128</sup> See: “Historic Waddington House Must Give Way to St. Lawrence Seaway Work,” *Massena Observer*, August 8, 1955, 5; and Mabee, *The Seaway Story*, 220.

<sup>129</sup> Mabee, *The Seaway Story*, 221.

<sup>130</sup> Gertrude Stein, *Everybody's Autobiography* (New York: Random House, 1937), 298.

<sup>131</sup> Untitled clipping from: *Cornwall Daily Standard-Freeholder*, July 2, 1958, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 43, Folder 2, “Canada: St. Lawrence Seaway, Moving, 1958-1960.”

Valley's physical geography. The flood also rearranged the Valley's less tangible social geography. The Seaway reoriented patterns of interaction, displaced social nexuses, and engendered a new social milieu and landscape. This geography is more elusive than its physical counterpart, but it is also corporeal, embodied in the residents and their self-referential spaces. This final section explores the entwined rearrangement of both geographies – the spatial organization of rehabilitated townsites and their placement vis-à-vis the river, as well as the transformed communities that inhabited them.

The foregoing section described some of the features characteristic of the new towns – looping streets and interconnections between parallel highways (Highways 2 and 401), neat and modern little homes interspersed with Victorian transplants, central shopping centers with ample parking, and plenty of nearby green space in an elaborate St. Lawrence park system.<sup>132</sup> However, the new towns manifestly lacked a sense of surprise and idiosyncrasy. Akin to Stein's phrase, they lacked a distinct identity, a sense of place that set them apart. In short, the new towns no longer felt special.

Local organizations, like the Lost Villages Historical Society, attempted to physically and discursively preserve a pre-Seaway narrative and some of the structures rescued from its waters. Established in 1977, the Society provides educational programs and materials about the riverside communities that existed prior to the Seaway project.<sup>133</sup> However, historical memory and memorialization are profoundly constructed and generationally contingent, and should not be viewed uncritically. Perhaps the old towns

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<sup>132</sup> Highway 401, which runs the length of Ontario's southern border, was not officially completed until 1968 with the construction of the Thousand Island Bypass between Brockville and Gananoque, ON. The section that runs just north of the "Lost Villages" was completed just after the Seaway Project, in the early 1960s. The Province of Ontario established the St. Lawrence Parks Commission in 1955 to oversee the management and promotion of the vast areas designated for recreation, conservation, and historical value along the St. Lawrence, between Kingston and Cornwall.

<sup>133</sup> "About the Society," *Lost Villages Historical Society Website*, accessed March 18, 2014, <http://lostvillages.ca/about-the-society/>.

only looked special once they had been lost. The project's legacy remains socially and ecologically ambivalent.

The floods altered the landscape so radically that other biota joined humans in the confusion. Motorists and boat captains, ducks and muskrats all seemed uncertain about their new surroundings. Familiar islands disappeared, new islands made of excavated till and elevated sections of the old shoreline appeared in their place, strewn throughout an expansive new section of the river impounded by the Moses-Saunders and Long Sault dams – Lake St. Lawrence. This upheaval divided old communities and separated them from their familiar environs, but it also engendered new communities. Collective experience bound people together, fostered by a shared sense of loss. This pervasive sentiment led to the efforts to memorialize the experience by institutions like the Lost Villages Historical Society. It also created new biotic communities – such as large groups of migrating birds that used the new lake as a way station. At both the bi-national and local scale, the Seaway project united and divided communities, unleashing creative and destructive forces that radically rearranged the surrounding physical and social geographies.

One of the most striking illustrations of these new arrangements is the shopping center. To replace the variegated spaces of old Main Street, Seaway planners proposed new, easily accessible shopping centers for the rehabilitated towns.<sup>134</sup> Despite their convenience, these commercial spaces represent the planners' fundamental misunderstanding of what locals valued about Main Street. It was not commercial

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<sup>134</sup> This story is not unique to the relocated Seaway villages, and the phenomenon of suburbanization of these kinds of spaces has been widely discussed in the historical literature. For an expansive and easily accessible example, see: Dolores Hayden, *Building Suburbia: Green Fields and Urban Growth, 1820-2000* (New York: Pantheon Books, 2003).

accessibility, but the social interactions offered by the old spaces that residents prized. Unlike old Main Street, the new shopping plazas had no spaces to congregate or socialize. One resident lamented this contrast, saying: “you’d meet more people coming and going, than you do here.”<sup>135</sup> The new spatial and commercial arrangements revised locals’ behavioral patterns – driving rather than walking to the stores, followed by purchasing goods and quickly leaving. Unlike Main Street, the plaza was a space of consumption not socially fulfilling interactions. Locals’ did not value adaptation to these new spaces for their efficiencies, but defined them as social losses.<sup>136</sup>

The plaza is a transient space, what the anthropologist Marc Augé called a *non-lieu* or “non-place.” Non-places are ambivalent spaces without enough social significance or meaning to be properly identified as a “place,” they engender no sense of belonging. Augé specifically commented on the modern supermarket, a central feature of the plaza, as a “space of non-place [that] creates neither singular identity nor relations; only solitude.”<sup>137</sup> Augé’s concept can be usefully applied to the modern shopping centers that in many ways defined the layout of the rehabilitated villages, privileging access to roads, parking spaces, and the plaza over sidewalks and the river.

It should not be surprising that these non-places and lack of a sidewalk culture did not inspire the kind of neighborly surveillance described by the urban activist Jane Jacobs, who valued sidewalks and dense urban clusters. In fact, their transient quality drew strangers and robbers, and in the first three months following the Iroquois plaza’s

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<sup>135</sup> Audio recording of an interview with Ron Fader of Iroquois on April 10, 2000. University of Western Ontario, “Visiting Old Iroquois,” *Megaprojects New Media Website* [http://megaprojects.uwo.ca/iroquois/OldIroquois\\_content.html](http://megaprojects.uwo.ca/iroquois/OldIroquois_content.html) <Accessed January 27, 2014>.

<sup>136</sup> Parr, *Sensing Changes*, 97.

<sup>137</sup> It should be noted that for Augé, only his concept of “supermodernity” creates non-places, but I think in the context of the foregoing discussion, it is a useful idea here, see: Marc Augé, *Non-Places: Introduction to the Anthropology of Supermodernity* (London: Verso, 1995), 103.

opening, it was robbed on five separate occasions.<sup>138</sup> The plaza is emblematic of the disconnect between planners' efforts to improve local lives through modernization and abstract designs, and the actual spatial and social practices through which locals embodied a place. The plaza undermined the aspects that made shopping a socially rewarding experience, and replaced it with a detached space that enabled consumption, but not meaningful interaction.

Another illustration of the rearrangement of the landscape is the parks and diverse array of trees constructed alongside the villages. The Hydro plan allocated a wide band of open space between the relocated communities and the St. Lawrence River. Residents wanted a waterfront for their new towns, a close facsimile of their previous communities, but got a park instead. To dispose of masses of excavated till and clay, Hydro spread it evenly along the newly formed shoreline of Lake St. Lawrence. In these harsh soils workers planted a diversity of non-native tree varieties – serbian spruce, austrian pine, english oak, norwegian maple, ginko, beam, european beach and ash, and linden – along with native species, such as birch, willow, and maple. Analogous to their human neighbors, the migrant and native trees struggled to thrive in the tough soil conditions set down by Ontario Hydro. As Joy Parr observed: “Anyone concerned that the plantings would obscure their view of the park, didn’t need to worry.”<sup>139</sup> Noted earlier, trees seemed to have a special place of psychological significance for local residents; the arboreal environment can be read as a sort of bellwether for the community psyche. The

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<sup>138</sup> Jane Jacobs, *The Death and Life of Great American Cities* (New York: Vintage, 1961), Chapter 2, “The Uses of Sidewalks: Safety,” 29-54. For the robberies see the following articles: “Heavy Safe Hauled Out Store Window: Two Trucks Stolen,” *Cornwall Daily Standard-Freeholder*, June 3, 1957, 5; “Robberies Arouse Iroquois Merchants,” *Cornwall Daily Standard-Freeholder*, August 7, 1957, 13; “\$500 Stolen in Robbery at Iroquois,” *Cornwall Daily Standard-Freeholder*, August 14, 1957, 13; “Thieves Strike Again, \$2400 in Loot Stolen,” *Cornwall Daily Standard-Freeholder*, February 24, 1958, 9; “Hydro Will Supply Two Extra Police at Iroquois Plaza,” *Cornwall Daily Standard-Freeholder*, June 7, 1957, 13.

<sup>139</sup> Parr, *Sensing Changes*, 98.

uprooting of their trees and the planting of small, unsuited varieties struggling to survive in a set of harsh conditions seemed to mirror their story and sentiment.

We do not often think of parks as barriers, instead they are perceived as recreational and healthy spaces; however, like so many other paradoxes embodied in these communities, the park assumed both roles. The parklands serve as a spatial buffer between the communities and the river, and the relocation of Highway 2 established an additional barrier between the communities of Long Sault and Ingleside and the St. Lawrence. There were sound water resource management and engineering reasons for this separation – deliberate fluctuations in water level could be required for optimal operation of the power dam, and parklands provide an unobtrusive bulwark against these induced hydrologic changes. The separation provided space for required for planners’ ambition to thoroughly regulate the river’s flow.

These parklands have a hidden history. They are a small component in the complex envirotechnical system that comprises the Seaway. Here, at the river’s new margins, the Seaway system created, demarcated, and engaged lands unoccupied by people to more thoroughly rationalize the river’s hydrology. This provides a glimpse into the scale and complexity of the system, which enlists human and natural actors to accomplish specific ends. Zoning laws that prohibit occupation of these spaces are buttressed by a discourse that emphasizes the value of parklands set aside for recreational and aesthetic purposes. These are not ancillary features of the Seaway project, but integral to its sustainment. The construction of this envirotechnical system encompasses more than the river and built-structures that alter its hydrology, it is a complex mixture of

the natural and anthropogenic, as well as the naturalization of accepted practices and discourses evinced and sustained by associated institutions and managers.

This is a superlative illustration of Burroughs's quote set down the beginning of this chapter. Separating the people from their rivers directly produced bureaucracy – in this instance the St. Lawrence Parks Commission, established in 1955 – but bureaucracy also played an antecedent and central role in the process of separation. The actual bureaucracies responsible for planning, constructing, and managing the Seaway are only a piece of a much larger envirotechnical system and regime. The widely accepted transboundary notion that improving the environment through large-scale technological intervention would correspondingly improve adjacent societies underscored this regime. The regime appropriated and articulated discourses of capitalist expansion through the continued compression of space and time, Cold War rhetoric that judged ideological superiority by material progress, and specific ideas about what modernity meant and looked like. According to this regime, a modern Seaway Valley included: the production of abundant electricity and swift movement of commodities along regimented rivers; planned communities with modern homes, looping streets, shopping centers, and interconnections to a wider network of automobility; parklands that served both aesthetic and utilitarian purposes; and the cooperative management of natural resources across national boundaries.

However, there is a substantive disconnect between the concerns found at different domains. The envirotechnical regime is constituted at a transnational level, it encompasses prevailing and entrenched discourses and practices evinced by societies represented at a bi-national scale and is embodied in the designs and language of Seaway

planners. As shown, the concerns and desires found at the local scale, among the Valley's residents, did not consistently comport with these designs. This discursive and practical mismatch led to local dissatisfaction and resentment directed toward planners' imperious attitudes and methods.

This incongruity is demonstrated in the report of a team of social workers from the University of Toronto, who surveyed the Seaway project area and described the relocated communities in 1957. The team recognized the intensity and abruptness of the change faced by these "settled and homogenous" small communities. Moreover, they observed that the move to new townships: "was evidently well planned and executed. Nor does it appear that the citizens generally suffered in the value of exchanged property. On the surface, in fact, the people of Iroquois seemed to have taken the move in their stride."<sup>140</sup> However, just below the surface the festering negative attitude of local residents puzzled the social workers. They wondered why the residents did not see the destruction of their old towns as "their special contribution to the great undertaking that is the St. Lawrence Seaway;" the social surveyors detected that the local communities "had no real sense of being partners in the adventure of creating a new township," and wondered if more active participation "would have produced a different and better result."<sup>141</sup> Indeed, as described above, Morrisburg felt the greatest investment in their rehabilitated town, because its citizens played the most active role in planning it. However, in another sense, these social surveyors missed the mark. Like the Seaway planners and envirotechnical regime that underscored the project, the logic and promise

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<sup>140</sup> Charles E. Hendry, University of Toronto, School of Social Work, *Roundtable on Man and Industry, Community Survey Report, St. Lawrence Impact Area*, Vol. 4, Part 2, Town of Iroquois (Toronto: University of Toronto Press, 1957), 29. Also see: Parr, *Sensing Changes*, 99-100.

<sup>141</sup> Charles E. Hendry, University of Toronto, School of Social Work, *Community Survey Report, St. Lawrence Impact Area*, Vol. 4, Part 2, Town of Iroquois, 29, 39-41.

of the megaproject seduced and captivated these social workers. They articulated the language of the envirotechnical regime, and by doing so, misapprehended local concerns. Their rationale said: “if megaprojects, then megaprojects with due process, local consultation, and consent.”<sup>142</sup> For the social workers, the panacea to local discontent was increased participation; but their failure to understand why locals could not appreciate the nobility of their contribution to the great Seaway enterprise reveals a misappraisal of the situation. The lack of consultation and respect for local concerns certainly provoked local disaffection, but, in the end, it was the sense of loss that mattered. The destruction of their familiar environs, physical reference points of self-identification, daily spatial and social practices, and the habits cultivated across generations through which they embodied familiar places along the river, these are the losses that endure in myth and memory.

In short, residents lost their senses of place and self, and the reverberations of these losses could be psychologically devastating. One retired Aultsville farmer in his 80s, upon seeing the familiar landscape and his personal history disappearing, rowed out to the island where he grew up on a farm. A few days later, his drowned body washed up downriver – his experience and embodied knowledge of the river suggested that his death was self-inflicted. His daughter later explained that he appeared overwhelmed by grief and the destruction around him.<sup>143</sup> Another resident appeared so disoriented by the loss of his maple trees that he could not recognize his transplanted house as home. When his family could no longer manage his bewildered state, he spent his final days in a

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<sup>142</sup> Quoted in: Parr, *Sensing Changes*, 100.

<sup>143</sup> This story is told in: Mabee, *The Seaway Story*, 200.

psychiatric ward in nearby Brockville.<sup>144</sup> The former principal of Iroquois's public school, disoriented by the loss of familiar markers of place, sometimes wandered out into the water along the old, now inundated roads. His friends and neighbors had to watch out to ensure his safety.<sup>145</sup> The sight of these roads disappearing into the water remains unnerving today, and serves as an informal reminder of places lost. These are the most dramatic stories of residents unable or unwilling to adapt to the changed geography, but the underlying sentiment, the psychological upheaval that accompanied its physical counterpart, pervaded the communities.

Rumors of the Seaway's immediate obsolescence, in terms of navigable depth, and its financial insolvency compounded the frustration of locals. As early as 1959, Theo Hills, a distinguished geographer at McGill University, argued that because of the seasonal constraints on Seaway shipping and the imbalance between up and down cargoes, the Seaway would never recoup the massive capital expenditures required for its construction.<sup>146</sup> Hill's comments echo the arguments of earlier Seaway opponents and skeptics, who saw it as a Midwestern project masquerading as a national concern. The grandiose promises of Seaway planners never materialized.<sup>147</sup> More than 60-years of Seaway advocacy nurtured this industrial dream, but skeptics always accompanied it. Norman Wilson's 1943 rehabilitation report on the St. Lawrence communities questioned the validity of these claims, and suggested that without a deliberate and concerted effort

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<sup>144</sup> This is the story of Ron Fader's grandfather, recounted in an interview with Ron Fader of Iroquois on April 10, 2000. Parr, *Sensing Changes*, 91.

<sup>145</sup> *Ibid.*, 90.

<sup>146</sup> Hills, *The St. Lawrence Seaway*, 77-84.

<sup>147</sup> For some of these promises, see: "Hydro Vice-Chairman Foresees St. Lawrence Valley Becoming Another Ruhr Area," *Cornwall Daily Standard-Freeholder*, October 11, 1956, 11-12; Fred Eaton. "To Ogdensburg: Hopes for Industrial Growth," *Potsdam Courier-Freeman*, July 30, 1955, 13; and "Greatest Industrial Expansion," *The Chicago American*, January 20, 1959, 61, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76-A, "American Newspapers."

to decentralize Canadian industry, the industrialization of the Seaway Valley seemed highly unlikely.<sup>148</sup> The skepticism of Hills, Wilson, and others proved well founded, the Seaway never recovered its capital expenditures and many ocean-going vessels were larger than its navigable dimensions by 1959 – adding an additional layer of insult to local injury.

In sum, this chapter approached the Seaway's reorganization of adjacent communities through several avenues. I attempted to situate local perspectives, practices, and stories in the context of transnational processes and bi-national institutions – to demonstrate the complexity of locals' relationships to the river and one another, as well as the disconnections between this complexity and the abstracted views and designs of Seaway planners. I wanted to show how local identity is fundamentally tied to the social and physical spaces that people inhabit. When the floods and fires that accompanied the Seaway destroyed those spaces, they took more than homes and community infrastructure, they erased points of self-reference, the spatial and social practices that defined adjacent communities, and the habitus ingrained by generations of living alongside the river. The Seaway subsumed their identities as well as their property, and the psychological costs are perhaps greater than the accompanying material losses. When spaces inextricably linked to identity are reconfigured, those identities are similarly reconfigured. In this case, the lost villages forged new identities on a collective sense of loss, nostalgia, and memorialization of an imagined past.

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<sup>148</sup> Norman D. Wilson. "Factors in the Rehabilitation of "Seaway Communities Partially or Wholly Inundated in the Development for Power and Navigation of the International Section of the St. Lawrence River" (1943), 19-24, SLU, *Seaway Collection*, Collection No. 40, Mabee Series, Box 71, Folder 5, "Factors in the Rehabilitation..."

I also began to explore the unique experiences and reactions of First Nations peoples swept up in the Seaway debate and project. The Seaway stories of the Kahnawake and the Akwesasne provide a unique lens into the project's relationship to identity, and political and cultural boundaries. Moreover, the Mohawk response to the project illustrates the tactics of resistance increasingly deployed in the "Red Power" movement that coalesced over the following decade. The methods forged during Seaway protests remain an integral part of the Mohawks' tactics of resistance, deployed in subsequent confrontations with the communities that envelop them.

The canals that collapsed space and time by linking distant locales to one another simultaneously divided others. However, local communities forged new identities through their resistance and collective sense of loss; the boundaries that divide them from their river established new bonds between them. The Seaway project reconfigured shared spaces, established non-places, subverted local habitus, and inundated social geographies and local markers of self-identification. This rearrangement of space, actors, practices, and identity constructed a new landscape – an envirotechnical system built on top of an older one. A cyclical process of inundation and reconstruction; as we materially remade the river we remade ourselves in myth and memory.

## Conclusions

### *To Hell With Economics!*

*It's a magnificent conception and has got to be built...*  
– Stephen Leacock<sup>1</sup>

Renowned Canadian humorist and author Stephen Leacock allegedly exclaimed that the Seaway's economics be damned, its conceptual importance outweighed its quantitative value. Although Seaway proponents routinely availed themselves of economic arguments, the project never lived up to its economic promise; however, its transformative power in other arenas is undiminished. The Seaway caused irrevocable social and ecological disruption. As the last chapter described, it revised the spatial patterns and daily-practices of adjacent residents, and remade local geographies while upending communities. It became a vector for non-native species, revised the migration patterns of avian and aquatic species, and reconfigured the river's hydrology. The Seaway eroded shorelines, destroyed floodplain wetlands, and changed the river's flow, depth, and turbidity. In the project's aftermath, the river also served as a sink for new sources of industrial waste, and its sediment captured some of this effluent – a legacy that has outlived many of its progenitors. Despite these ecological and social repercussions, Leacock was correct about the project's conceptual importance. The Seaway project and associated institutions remain symbols of bi-national cooperation, and are held up as exemplars of transboundary resource management. The project's symbolic power tends to conceal an ambivalent legacy. If we continue to perpetuate the Seaway of myth and leave the inglorious aspects of its construction and repercussions hidden, we tacitly

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<sup>1</sup> Attributed to Stephen Leacock, this quote is found on the Dust Jacket of: Hills, *The St. Lawrence Seaway*, n.p. I say “allegedly” in the following line, because I cannot find another reference to corroborate his use of this phrase.

endorse a modified version of Leacock's proclamation – to hell with economics, ecosystems, and local communities! It's a magnificent symbol that has to be maintained.

Nearly 50 years after the opening of the Seaway, the United States Army Corps of Engineers advanced the prospect of enlarging the dimensions and depth of the Seaway's shipping channel from 27 to 35 feet deep, to accommodate larger vessels and increased cargo capacity.<sup>2</sup> Local stakeholders and environmental groups resoundingly opposed expansion, and subsequent studies excluded the possibility from their analyses. For example, the 2007 comprehensive *Great Lakes St. Lawrence Seaway Study*, jointly undertaken by seven Canadian and American federal agencies, left the question of expansion conspicuously unaddressed.<sup>3</sup> The study described several proposals to optimize and rehabilitate existing infrastructure, but did not broach the Corps' scale-up proposal.<sup>4</sup> By 2010, the Corps explicitly abandoned the expansion, citing stakeholder concerns, underutilization, and prohibitive rehabilitation costs attached to the existing infrastructure.<sup>5</sup> This recent episode, in which the specter of expansion receded in response to the environmental, local, and economic concerns, reveals significant historical and cultural change when contrasted with the Seaway's past. As we have seen, Seaway planners built the project in the 1950s under a very different set of priorities, and I have argued that the Seaway represented a historically and culturally specific *envirotechnical system*, sustained by values and discourses evinced by the prevailing and

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<sup>2</sup> United States, Army Corps of Engineers, *Reconnaissance Report: Great Lakes System Navigation Review* (Washington, DC: USACE, 2002), viii; and United States, Army Corps of Engineers, *Supplemental Reconnaissance Report: Great Lakes System Navigation Review* (Washington, DC: USACE, 2010), 59.

<sup>3</sup> The seven agencies involved in the report are: Transport Canada, U.S. Army Corps of Engineers, U.S. Department of Transportation, St. Lawrence Seaway Management Corporation, St. Lawrence Seaway Development Corporation, Environment Canada, and the U.S. Fish and Wildlife Service, *Great Lakes St. Lawrence Seaway Study, Final Report, 2007* (Ottawa: Transport Canada, 2007).

<sup>4</sup> *Ibid.*, 112-114.

<sup>5</sup> United States, Army Corps of Engineers, *Supplemental Reconnaissance Report* (2010), 47, 107.

associated regime. However, neither the system nor the regime is static. They are environmentally, technologically, and culturally dynamic.

### *An Ambivalent Legacy*

The Seaway got off to a bad start in the spring of 1959. The climate appeared uncooperative and the river's ice took an additional three weeks to sufficiently melt to allow ships to travel the Seaway. System administrators immediately confronted seasonal unpredictability; although they changed the face of the earth and attempted to rationalize the river, they did not fully dominate nature. They bent it to their will and changed its configurations to accommodate their dreams, but it continued to elude their machinations. One hundred ships waited below Montreal for the upper channel to clear, and when they began to move upstream – in late April and early May 1959 – pilot inexperience, high winds, and turbulent locks slowed their passage. The Welland Canal presented the largest bottleneck in the system's early operation. Observers reported between 20 and 50 ships consistently anchored at the Lake Ontario entrance to the Canal during the first year of operation.<sup>6</sup> When ships passed through the Welland, they often found inadequate harbor facilities at Great Lakes ports. In response to these conditions, a writer for the British magazine *New Statesman* commented: "After a quarter century of fighting for the Seaway most of the lake ports, it seemed, were wholly unprepared when the ships at last came through."<sup>7</sup> At Detroit, one German captain, after a long wait for a berth, angrily asked: "Didn't you guys expect ships?"<sup>8</sup> In fact, at the systems opening,

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<sup>6</sup> "Trouble on the Seaway," *U.S. News and World Report*, Vol. XLVI (June 1, 1959), 1.

<sup>7</sup> Robert Bendiner, "Seaway Sickness," *New Statesman*, Vol. LVII (June 27, 1959), 879

<sup>8</sup> *St. Lawrence Seaway Factsheet*, June 1959, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 56, Folder 7, "Periodicals with Seaway Related Articles – 1959."

only the harbors of Milwaukee and Duluth had completed commensurate infrastructure expansions to accommodate Seaway traffic.

During the first navigation season, Lewis Castle predicted a 5 million ton shortfall in the Seaway Development Corporation's freight projections. Moreover, during the first year of operation, the Corporation did not generate enough toll revenue to pay the outstanding interest on the bonds issued in its name, and had to appeal to Congress to cover their deficit.<sup>9</sup> The Corporation's immediate insolvency rekindled a debate about the Seaway's toll structure. The tolls had been set low to encourage traffic and encouraged accusations that they constituted a *de facto* subsidy for water transportation. An old Seaway foe, the Association of American Railroads justifiably warned: "the American taxpayer is about to be taken for another multi-million dollar ride."<sup>10</sup> In response to rumors of toll increases, a Canadian official reportedly protested that premature toll restructuring would "kill the goose before it lays the gold eggs."<sup>11</sup>

In the face of an inauspicious start, Castle confidently predicted that the Seaway's traffic would grow exponentially, and the waterway would carry 50 million tons of freight by 1968.<sup>12</sup> The results exceeded his prediction; in 1968, the waterway carried 66.5 million tons of freight. In fact, apart from a turbulent first year, Seaway traffic steadily increased over its first 20-years in operation. In 1979, the Seaway carried over 80 million tons, a cause for celebration at the system's 20<sup>th</sup> anniversary. However, 1979

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<sup>9</sup> St. Lawrence Seaway Development Corporation. *Annual Report, 1959*, (Washington, DC: The Corporation, 1960), iii, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 80, "Seaway Development Corporation."

<sup>10</sup> Reported in: *Montreal Star*, March 13, 1959, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 47, Folder 2, "Clippings – United States and Canada – Canada: St. Lawrence Seaway Effects, January-May 1959."

<sup>11</sup> Willoughby, *The St. Lawrence Waterway*, 277.

<sup>12</sup> Lewis Castle, "The Decade Ahead," *St. Lawrence Seaway Development Corporation Press Release*, January 4, 1960, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 62, Folder 4, "Seaway Development Corporation – Speeches and Addresses."

marks the zenith of the Seaway's navigation success story, and by 1994 the total freight it carried declined to 44 million tons, a figure that has roughly held steady since.<sup>13</sup> This downward trend requires a reassessment of the Seaway's promise and economic legacy.

The Welland bottleneck provides a useful aperture into this reevaluation. The Liberal government proposed the Welland Canal's basic route and dimensions in 1908, and construction according to these plans began in 1913. The Seaway project deepened the Welland two additional feet – from 25 to 27 feet – but it remained a systemically limiting factor.<sup>14</sup> In short, the piecemeal approach characteristic of Great Lakes-St. Lawrence development continued to hamper the efficacy of the integrated Seaway system. The Welland's dimensional limitations highlight a basic issue – the Seaway's built-in obsolescence.

During Seaway construction, proponents claimed that it could accommodate 75 percent of the world's waterborne vessels.<sup>15</sup> However, skeptics challenged this assertion. In 1959, Theo L. Hills speculated that the Seaway's ability to accommodate ocean-going traffic might have been overstated by advocates and administrators.<sup>16</sup> Likewise, in a 1995 article in *Invention and Technology*, Daniel McConville argued that the Seaway's dimensions already made it obsolete in the 1950s, because the majority of the world's merchant marine fleet outsized its locks and channel depth. The soft technological lock-

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<sup>13</sup> The agencies now measure all tonnage carried in metric tons (tonnes), but are converted here for consistency. For historical and contemporary traffic measurements see: The St. Lawrence Seaway Management Corporation and St. Lawrence Seaway Development Corporation, "Traffic Reports," *Great Lakes-St. Lawrence Seaway Website*, accessed April 18, 2014, <http://www.greatlakes-seaway.com/en/seaway/facts/Traffic/>.

<sup>14</sup> The Welland's limitations resound as a central feature of the Seaway's limited potential in the oral interviews conducted by Claire Parham with Gary Moore and David Flewelling. Parham, *The St. Lawrence Seaway and Power Project*, 325-326.

<sup>15</sup> For example, see: "75 per cent of World's Ships Able to Use Seaway," *Cornwall Daily Standard-Freeholder*, June 28, 1955, 22, SLU, *Seaway Collection*, Collection No.40, St. Lawrence University Series, Box 76-B, "Canadian Newspapers."

<sup>16</sup> Hills, *The St. Lawrence Seaway*, 145-147.

in, evidenced by the Welland, led to diminishing returns, and at present only about four percent of the world's shipping vessels can fit in the Seaway.<sup>17</sup> Moreover, a shift to the containerization of freight, which began in 1956, changed international shipping practices, accelerated the growth of vessel dimensions, and, in the words of McConville: "condemned the St. Lawrence to a bulk-cargo future."<sup>18</sup>

Seaway planners continuously combatted the ever-present specter of obsolescence and diminishing returns on their infrastructure investment. In 1974, the Welland received an upgrade when the Canadian government opened a bypass channel around the city of Welland, ON. The bypass allowed ships to avoid numerous lift-bridges and the winding channel through the city, helping to alleviate the Welland's bottleneck.<sup>19</sup> However, infrastructure problems persisted. In the fall of 1984, a lift-bridge failure delayed traffic on the Welland for 18 days, and a collapse of Welland Lock 7's wall followed in 1985. The collapse pinned the *Furia*, a Liberian freighter, in the lock and closed the canal for an additional three weeks.<sup>20</sup> In the face of recurrent and costly infrastructure failures the Canadian government committed itself to a \$175 million Welland rehabilitation program.

On the American side, the Eisenhower Lock showed worrisome signs of premature aging and significant deterioration by the 1970s. These issues resulted from the Development Corporation and Army Corps' construction use of subpar concrete made with local, natural cement, rather than the more rigorous portland variety. Cement honeycombing, a condition created when the cement mortar fails to fill the voids between

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<sup>17</sup> McConville, "Seaway to Nowhere," 34-44. The four percent figure is provided in: Parham, *The St. Lawrence Seaway and Power Project*, 323.

<sup>18</sup> McConville, "Seaway to Nowhere," 42.

<sup>19</sup> Becker, *From the Atlantic to the Great Lakes*, 141.

<sup>20</sup> "Wall in Welland Canal Collapses, Halts Shipping," *Toledo Blade*, October 15, 1985, n.p.; "Repaired Seaway Opens," *Chicago Tribune*, November 8, 1985, "Business Section," n.p.

the concrete's coarse aggregate particles, was already evident during construction and undermined the Lock's structural integrity. Consequently, the Eisenhower Lock required frequent repair and ultimately a complete overhaul. In fact, in 2009, the U.S. government allocated over \$31 million for a ten-year rehabilitation and modernization program.<sup>21</sup>

Accidents and infrastructure deficiencies, diminishing traffic, insufficient toll revenues, unanticipated maintenance costs, along with a changing post-industrial economic configuration of the Great Lakes region – which demanded less iron-ore and exported less grain – all pushed the Seaway toward insolvency. Seaway administrators had to repeatedly plead with Congress to alleviate their financial burden. For example, the U.S. Merchant Marine Act of 1970 canceled the interest owed on the Seaway Development Corporation's construction debt, and provided a long-term savings of over a billion dollars. However, the Corporation still struggled to pay its bills. In 1980, Congress allowed the Corporation to reschedule payments on its debt's principle, crafting a flat amortization of \$2 million over five years – but even that relief proved insufficient. Finally, in 1982, President Reagan signed PL97-369 – a Department of Transportation appropriation bill – that cancelled the Corporation's outstanding debt. This brought the United States in line with Canada, which cancelled the Seaway Authority's debt in 1977.<sup>22</sup> The predictions of skeptics and railroad association representatives came to pass and taxpayers in both countries bailed out an overleveraged system – to hell with economics indeed.

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<sup>21</sup> Duane Ramsey, "St. Lawrence Seaway to get Makeover," *Toledo Free Press*, June 25, 2009, "Transportation," n.p.; *Great Lakes St. Lawrence Seaway Study, Final Report, 2007*, 86-90; Becker, *From the Atlantic to the Great Lakes*, 135, 143.

<sup>22</sup> Becker, *From the Atlantic to the Great Lakes*, 135; United States, Department of Transportation, *St. Lawrence Seaway Development Corporation, 1982 Annual Report* (Washington: GPO, 1983), 3.

## Power

In contrast to the Seaway's navigation aspect, the project's hydroelectric power facilities delivered in abundance; but delivered by and to whom are another matter. On the Canadian side, Ontario Hydro produced and distributed its share of Big-Mo's electric bounty. In general, Hydro's rates undercut its U.S. counterparts by about half, but following development at the Long Sault, the province lacked viable new sites for large-scale hydroelectric power production.<sup>23</sup> A subsequent move toward nuclear power generation to meet the demands of a growing market substantially undermined Hydro's promise and ability to deliver cheap power to Ontario's industry and municipalities. On both sides of the border, local communities requested preferential rates and quantities of the project's electric output set aside to encourage regional industrial growth. In Ontario, the utility basically refused these requests; an outcome that Lionel Chevrier decried: "amounts to a calamity."<sup>24</sup> Chevrier rightly noted that industry received no incentive to move to the Seaway Valley, and on the whole, it did not.

In New York, requests for Big-Mo's output besieged the Power Authority. In typical provocative fashion, Robert Moses remarked: "Isn't the miracle of the loaves and

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<sup>23</sup> The average industrial rate in Ontario was 6.8 mills per kwh (a mill refers to 1/1000 U.S. dollar) or .68 cents per kwh and the average household paid about 11.9 mills per kwh. Taking a sample of public and private power distribution rates across the U.S. (New York, NY and Boston, MA as private examples, and Knoxville, TN and Seattle WA as public examples) we arrive at an average household rate of 22.8 mill per kwh. For this data see: Robert W. Macauley, Vice Chairman, Ontario Hydro, "Notes in Reference to a Speech... in the legislature," March 9, 1959, 20, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 68, Folder 2, "Ontario Hydro – Speeches by Other Individuals Affiliated with Ontario Hydro," "Power Rate Cards" (Various distributors), SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 61, Folder 1, "Miscellaneous;" and Mabee, *The Seaway Story*, 224-235.

<sup>24</sup> I say "basically" because Cornwall received a minor concession from Ontario Hydro and received power at 5 mills per kwh: Robert W. Macauley, Vice Chairman, Ontario Hydro, "Notes in Reference to a Speech... in the legislature," March 9, 1959, 20, SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 68, Folder 2, "Ontario Hydro – Speeches by Other Individuals Affiliated with Ontario Hydro;" for the Chevrier quote, see: *Cornwall Daily Standard-Freeholder*, May 30, 1957, n.p., SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 33, Folder 1, "Clippings – United States and Canada – St. Lawrence Seaway, May-July, 1957."

fishes minor compared to what I am called up to perform in allocation of St. Lawrence power?”<sup>25</sup> Unlike its Ontario counterpart, PASNY decided to limit sales of Big-Mo’s power to a 150-mile radius and specifically encourage industrial relocation to St. Lawrence Valley communities.<sup>26</sup> Moses gave Alcoa, which lost the use of its small St. Lawrence power plant at Massena, a full-quarter of Big-Mo’s power at a preferential rate. He promised an additional quarter to the Reynolds Metals Company who agreed to build an aluminum reduction plant in Massena, and operate in conjunction with a General Motors fabricating facility. In total, PASNY promised to deliver 57 percent of Big-Mo’s power to industrial users in the project’s immediate vicinity. This direct-to-industry figure is startlingly high when compared with the industrial allocations of other public-power agencies, which typically ranged from 36 to 13 percent.<sup>27</sup> The distribution method for the remaining power also diverged from PASNY’s public-power counterparts. The Authority almost exclusively delivered power *en bloc* to privately owned utility networks, such as the Niagara Mohawk Power Corporation.<sup>28</sup> This hybrid system of public production and private distribution meant that household customers received

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<sup>25</sup> Reported in: “*Ogdensburg Journal*, May 14, 1955, n.p., SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 12, Folder 1, “Clippings – United States and Canada – U.S.: St. Lawrence Power, January-July, 1955.”

<sup>26</sup> Their license granted by the Federal Power Commission required them to make a “reasonable portion” of Big-Mo’s power available to neighboring states, so Vermont received a share because it was the only state within the 150-mile radius, see: “Agreement of Settlement and Compromise to Resolve the Akwesasne Mohawk Title and Trespass Claims With Respect to Lands Situated in the State of New York, February 1, 2005,” *Indian Law Resource Center Website*, accessed February 18, 2014, <http://www.indianlaw.org/sites/default/files/resources/MohawkAgreement200502.pdf>.

<sup>27</sup> “New Reynolds, Chevrolet Plants Aid Seaway Valley Economy,” *Massena Observer*, June 25, 1959, 56. By comparison the BPA allocated 36 percent of the Columbia Valley’s power to industry, Ontario Hydro allocated 29 percent of all its power, the TVA 14 percent of its power, and Hydro Quebec 13 percent of the Beauharnois Dam’s power: Mabee, *The Seaway Story*, 232.

<sup>28</sup> PASNY reserved only 12 percent of Big-Mo’s power for distribution by municipally owned networks, Alex Radin of the American Public Power Association contrasted this with the 50 percent reserved at the BPA’s Bonneville Dam, and criticized PASNY for squandering the opportunity to use public power as a yardstick for private rates. Radin’s comments are quoted in: *Ogdensburg Journal*, June 25, 1957, n.p., SLU, *Seaway Collection*, Collection No.40, Mabee Series, Box 33, Folder 1, “Clippings – United States and Canada – St. Lawrence Seaway, May-July, 1957.”

virtually no reduction in power rates. Northern New Yorkers in Massena rejoiced at the influx of industrial jobs, but only indirectly encountered the transformative potential of cheap and abundant public electricity.

### *Environmental Constraints and Environmentalism*

The envirotechnical regime that sanctioned and sustained the Seaway in the 1950s confronted and began to slowly internalize some of the concerns raised by environmentalism over the following decades. The Seaway captured the attention of a nascent environmental movement when the Army Corps of Engineers speculated on ways to address the system's most fundamental limitations – seasonality and ice. Pejoratively termed the “iceway” by opponents 16 years earlier, in 1965, Congress directed the Corps to study various means of extending the Seaway's navigation season. Ice had been described as the waterway's primary limiting factor as early as 1815 in DeWitt Clinton's “Memorial to the Citizens of New York,” which professed the climatic superiority of the Erie Canal.<sup>29</sup> With the Seaway's delayed opening in 1959, observers began to discuss a range of possibilities – from the remotely possible to the patently absurd – for extending the system's shipping season. These included – ice-beakers and ice-diversion jetties; narrowed channels with steel pilings to increase the river's current and prevent ice-formation; forcing hot compressed air through plastic tubes to the riverbed where bubbles would lift warmed water and melt the surface ice; electrically heating the river's water; or using the hot thermal waste-water discharged in the production of atomic energy.<sup>30</sup> Although the Corps ignored the more outlandish of these ideas and understood the extreme difficulties involved, they were convinced that the season could be extended.

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<sup>29</sup> DeWitt Clinton, “Memorial of the Citizens of New York,” 413.

<sup>30</sup> Mabee, *The Seaway Story*, 263.

Following a four-year study, they submitted a feasibility report that recommended further investigation, but cautiously suggested the possibility of limited season extension. Congress accepted their recommendations and funded a “demonstration program” whereby the Corps would determine the feasibility, practicality, and scope of this extension.<sup>31</sup> This program divided Seaway loyalties – Canadian officials and hydroelectric power interests refused to participate and expressed concern about repercussions effecting the river’s flow and water levels – but more significantly, it provoked the ire of the environmental movement.

In 1976, the Corps confronted an organized, highly effective coalition of concerned locals and environmentalists. The “Save the River” Committee based in the Thousand Islands area of New York drew national attention to their campaign to kill the Corps’ ice program. The Committee enlisted powerful political supporters in New York, Washington DC, and Canada – including the Governor of New York, Hugh Carey, and U.S. Senator Patrick Moynihan. The Committee argued that the ice program would “kill the river” by irreparably damaging aquatic ecosystems whose health required the ice cover.<sup>32</sup> The Corps also confronted a changed institutional environment. The passage of the National Environmental Policy Act of 1969 (NEPA) required federal agencies to prepare environmental impact statements, and scientific and political disagreement over these environmental impacts effectively quashed the Corps’ ice program.

This episode reveals the dynamism and overlap of envirotechnical regimes. In the late 1960s, a transnational institutionalization of environmental concerns began to

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<sup>31</sup> The program was authorized under the Rivers and Harbors Act of 1970 and was extended by the Water Resources Development Act of 1974. The program expired in 1977. See: Becker, *From the Atlantic to the Great Lakes*, 135-140.

<sup>32</sup> *Ibid.*, 140.

restructure the prevailing envirotechnical regime. This process revised environmental discourse, normalized new management practices, and instituted new sources of authority. Along the Seaway this transformation proceeded incrementally and the system slowly internalized the priorities of a regime in transition. The Seaway's bi-national character meant that the system confronted these changes asymmetrically, and had to contend with new discourses and practices that unevenly emanated across the international border. By the late 1970s, a revised envirotechnical regime incorporated a diverse array of new actors, institutions, ideologies, and reimagined landscapes. This is especially evident with the Great Lakes Water Quality Agreement (GLWQA) of 1978, which reconfigured collaborative management practices in the Great Lakes-St. Lawrence Basin.<sup>33</sup> The 1978 GLWQA institutionalized an ecosystem approach, which acknowledged the system's interconnectedness and the interdependency of factors that govern its ecological health. This approach expanded the focus, complexity, and constituencies of system management – it considered physical, chemical, and biological components as systemically integrated; took a more geographically inclusive view of the basin to consider non-point factors; and integrated human dynamics into metrics of ecosystem integrity.<sup>34</sup> The ecosystem approach's transboundary institutionalization suggests a transformed envirotechnical regime, which, in turn, restructured the terms of Seaway management and permissible range of practices within the system.

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<sup>33</sup> The 1978 Agreement updated and expanded its predecessor, signed in 1972. I focus on the 1978 version because the 1972 Agreement primarily focused on one problem – the eutrophication of the Great Lakes. The 1978 Agreement fundamentally revised bi-national management by institutionalizing an “ecosystem approach.” See: “Canada-U.S. Great Lakes Water Quality Agreement,” *Environment Canada Website*, accessed March 29, 2014, <http://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=45B79BF9-1>.

<sup>34</sup> “The Great Lakes Atlas – Joint Management of the Great Lakes,” *Environmental Protection Agency Website*, June 25, 2012, accessed March 29, 2014, <http://www.epa.gov/greatlakes/atlas/glat-ch5.html>.

The increased centrality of ecological concerns to the Seaway system is reflected in Environment Canada's 1985 declaration that the (former) International Rapids Section represented an environmental "Area of Concern."<sup>35</sup> This designation legitimated many of the issues already identified by environmental groups, including: floodplain wetlands destruction, the elimination of spawning routes for various species of fish, the introduction of non-native biota, and industrial effluents produced by local factories.

The introduction of the zebra mussel became a symbol for the Seaway's ecological legacy and unintended consequences. Transported in the ballasts of ocean-going ships, the zebra mussel rapidly colonized all the Great Lakes, the St. Lawrence, and many of its tributaries. The mussel is ecologically pernicious because it reduces the total amount of phytoplankton available to other organisms, and increases the water's clarity causing changes to the ecological structure of lake communities. Moreover, the zebra mussel carries immediate and substantial economic costs, by clogging the penstocks of hydroelectric dams, the intakes of water treatment and delivery facilities, as well as the cooling systems of boat engines.<sup>36</sup> This confluence of ecological and economic damages has elevated the zebra mussel's profile, and reveals the Seaway's mixed ecological and economic legacy.

The zebra mussel is only one of many non-native species introduced by the dynamic reconfiguration of the Great Lakes-St. Lawrence system over two centuries. For example, the Erie Canal may have served as a vector for the sea lamprey, a parasitic fish

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<sup>35</sup> The "Area of Concern" designation was formally enshrined on both sides of the international boundary by the Great Lakes Water Quality Agreement of 1987: "Canada-U.S. Great Lakes Water Quality Agreement," *Environment Canada Website*, accessed March 29, 2014, <http://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=45B79BF9-1>.

<sup>36</sup> "Zebra Mussels in the Great Lakes Region," *Great Lakes Information Network Website*, accessed March 29, 2014, <http://www.great-lakes.net/envt/flora-fauna/invasive/zebra.html>.

first observed in Lake Ontario in the 1830s. Modifications to the Welland Canal in 1919, allowed the lamprey to migrate into the upper Lakes extending its predatory range. Alewife fish also appeared in Lake Ontario during the 19<sup>th</sup> century, and migrated into the upper Lakes through an expanded Welland Canal in the 1930s. A voracious competitor for limited sources of zooplankton, the alewife has contributed to the reduction of native species populations, such as the whitefish. In the 1960s, the critical growth of the Lakes' alewife population prompted fishery managers to deliberately introduce two species of Pacific salmon (coho and chinook) to prey on the alewife. In turn, the introduced salmon have been implicated in another unintended series of ecological transformations.<sup>37</sup> In short, as planners reshaped the Great Lakes-St. Lawrence system toward a navigable and hydroelectric future, they inadvertently reshaped its biotic communities. Although the Seaway transformed ecologies and societies, this is not a declension narrative. The Seaway was not an ecological *coup de grâce*.

Another native community confronted the Seaway's legacy of erosion, hydro-chemical and biological transformations. Long after the project's structural completion, the Akwesasne continued to protest changes to their fisheries, the erosion of their shorelines, Seaway planners' questionable land seizures, and the fluvial deposition of industrial effluents by neighboring factories in Massena and Cornwall. For example, the Reynolds plant leached fluoride into the water and effectively destroyed a flourishing dairy industry on the Akwesasne Reserve. Moreover, the heavy metals produced by now defunct factories permeate the riverbed's sediment and continue to contaminate fish stocks used as food. The foregoing chapter discussed recent settlements reached between

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<sup>37</sup> Their competition for limited food resources, spawning habitat, etc. is described in: Stephen Scott Crawford, *Salmonine Introductions to the Laurentian Great Lakes: An Historical Review and Evaluation of Ecological Effects* (Ottawa: National Research Council of Canada, 2001), 120-132.

the Akwesasne, OPG, and the NYPA. These settlements compensated the Akwesasne for a litany of grievances, acknowledged persistent and protracted environmental damages, and partially enfranchised the Akwesasne in future decision-making and environmental management.

An evolving system, the Seaway has internalized many environmentalist concerns and voices, and the associated management regime has mobilized substantial monetary, academic, and cultural resources to identify and remediate a number of these concerns. For example, the *Great Lakes St. Lawrence Seaway Study* (2007) cost \$20 million, involved seven federal agencies from Canada and the United States, and tried to project system's future up to 2050. In addition to economic and infrastructural challenges, the study attempted to delineate and address the environmental problems posed by the Seaway. Accordingly, it dedicated a chapter to "Environmental Considerations" that suggested a range of environmental monitoring and remediation strategies for the future.<sup>38</sup> However, interested environmental groups roundly criticized the report's environmental focus and recommendations as parochial and conservative, saying: "While we acknowledge the increased effort to include environmental concerns in this document... we strongly feel that this report fails to adequately balance environmental protection and restoration with the interests of navigation." They further pronounced the effort as a lost opportunity to develop "truly sustainable" navigation.<sup>39</sup> Despite these objections, the study reflects a dynamic envirotechnical system and regime, where

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<sup>38</sup> *Great Lakes St. Lawrence Seaway Study, Final Report, 2007, 53-71.*

<sup>39</sup> This response was signed by 43 separate environmental groups and raised six specific objections to the 2007 study. The response can be found at: Jennifer Caddick (Save the River) and Jennifer Nalborne (Great Lakes United), et al. to David Wright, Project Manager, US Army Corps of Engineers, Detroit District, "Re: Great Lakes St. Lawrence Seaway Study," January 18, 2008, *Canadian Environmental Law Association Website*, accessed March 29, 2014, [http://s.cela.ca/files/uploads/596\\_GLSLS.pdf](http://s.cela.ca/files/uploads/596_GLSLS.pdf).

environmental concerns and mitigation strategies have increasingly appropriated discursive space and system resources. Environmental groups suggest that they remain a secondary consideration, but they form part of the institutional conversation and normalized practices. Despite these systemic modifications, the legacy of the Seaway remains ambivalent and the system's future is uncertain.

Unlike the *Great Lakes St. Lawrence Seaway Study*, which sought to glimpse the future, this dissertation focused on the Seaway's past. Constructing a historical narrative organized around three central analytical contributions – the Seaway as an envirotechnical system, the Seaway as a transnational space, and the Seaway as a transformative agent.

Using the envirotechnical analytical framework furnished by Sara Pritchard, I explored the construction of the Seaway as dynamic array of artifacts, discourses, and institutions set in specific technological, environmental, and social contexts. This framework offers significant explanatory power and broadens our understanding of the Seaway system as an entangled configuration of ecologies, technological artifacts, practices, discourses, people, and institutions. This Seaway system was built, justified, and sustained by a corresponding envirotechnical regime. This regime is a bi-national construction and was comprised of institutions, ideologies, and landscapes that transcend borders. However, both the system and regime are dynamic configurations, continually evolving to incorporate new actors, objectives, discourses, and other manifestations of political, economic, and social power. Throughout this dissertation I have attempted to capture this dynamism and describe the changing envirotechnical constituencies aligned and deployed to specific ends.

By exploring the inextricable links between the anthropogenic and natural and interrogating the boundaries between them, I expand the Seaway literature's analytical and narrative scope. I have historicized the Seaway as an integration of a series of discrete, overlapping, and often competing antecedent systems; and taken a longer view of the Seaway story, to include its discursive origins, the protracted debate that preceded its construction, the bi-national institutions that manage shared resources, Seaway advocacy and opposition groups, the construction of a bi-nationally sanctioned Seaway system, and its recursive effects on adjacent lands and peoples. This directly contributes to a growing Envirotech literature, which problematizes the boundaries between the natural and built worlds, and to a longer historiographical trajectory concerned with the relationship between humans and the environment, and that views the environment as an actor that makes history, and is not simply subjected to it.

I believe the most significant contribution I have made accompanies my dissertation's deliberate bi-national focus. I captured sources, voices, and stories from both sides of the national border and deployed them in a transboundary narrative. Focusing on the river's transnational dimensions represents a significant intervention in riverine history. Earlier works have described how rivers inform and sustain national regional identities, but the Great Lakes-St. Lawrence offers an opportunity to explore reconfigurations and reifications of identity in a transnational space. The creation and operation of the International Joint Commission offers a superlative illustration of this bi-national character. The IJC established an institutional bridge between nations, resource managers, and knowledge producers, but it concurrently limits the range of uses and varieties of knowledge sanctioned within the envirotechnical regime. To highlight the

variegated visions of the boundary waters, I purposefully chose the phrase “transnational resource,” which captures the region’s jurisdictional dynamism and competing array of identities and perspectives.

Throughout the dissertation, I tracked the Seaway’s interaction and transgression of boundaries. The project occupies a shared and contested space replete with competing political jurisdictions, cultures, and power dynamics. The renegotiation of this space is central to this project. The Seaway system is sustained by an envirotechnical regime that has normalized a set of bi-national interests advanced by a nebulous notion of “progress” through technological intervention. However, the 62-year debate that preceded Seaway construction illuminates competing local, regional, and national motivations; and coupled with the voices of the disenfranchised, undermines the dominant Seaway narrative.

This bi-national character situates the Seaway uncomfortably alongside contemporary, 20<sup>th</sup> century North American water infrastructure megaprojects. The obvious analogs – the TVA, BPA, and Colorado Compact – diverge in substantive ways from the St. Lawrence project. The Seaway borrowed liberally from the pool of labor, expertise, and machinery deployed in these projects, but the international boundary line complicated their replication on the St. Lawrence. The projects shared a high-modern ethos, construction methods, and even specific objectives. However, the public power dream receded in New York with the decision to allow private distribution, and local communities did not receive a commensurate share of its benefits, undermining the system’s regionally transformative power. The Seaway changed the surrounding environs, but not directly to the economic benefit of nearby communities. The project had to be coordinated across borders and a proliferation of institutional actors. The

international boundary complicated the project's oversight and objectives, as well as its orbit of managers, users, and end goals. The Seaway was not only a regional project but also a transnational one, and this political reality informed its composition.

Finally, I look at the Seaway as both a social construct and a transformative force. Staying true to the claim that the system is both technological and environmental, I look at the environmental conditions that shaped the project in discourse and materiality. The environment conditioned the range of technological possibility, just like the regime limited the range of sanctioned use. I engage with literature focused on megaprojects and the transnational high-modern ethos that buttressed them. As planners and workers sought to rationalize the river and adjacent landscape, a complex and often unanticipated reality confronted their schemes. Alternative visions and uses did not simply disappear under their abstract gaze. The Seaway project wrought massive transformations. It created social and spatial dislocations in locals' lives, altered the river's hydrology, and rearranged the landscape, but it never wholly dominated nature or adjacent communities. It was a reciprocal transformation – we transformed the river and it transformed us. The river and communities are not gone, but remade; and the Seaway is not a technological triumph over nature, but an envirotechnical system that set technologies and environments in an interdependent relationship.

Using these analytical approaches, I traced the origins of the Seaway idea – to construct a navigable system linking the Great Lakes with the Atlantic Ocean by way of the St. Lawrence River – and its place alongside 19<sup>th</sup> century constructions of waterways and nations in competition. I explored the transformation of this idea to a bi-national political question. In service of this idea, a transboundary cadre of waterway enthusiasts

deployed the language and values of the Progressive conservation movement, and contributed to the development and operation of conservation diplomacy. This phenomenon established the IJC, created a network of transnational environmental expertise, and reshaped the relationship between Canada and the United States. The IJC officially sanctioned and lent epistemic authority to the Seaway idea, but the boundaries between expertise and political advocacy often appear blurred. A central component in a larger envirotechnical regime, the IJC normalized and prioritized certain uses and visions of the boundary waters while implicitly marginalizing others.

Although the IJC's favorable assessment of the Seaway idea carried institutional and epistemic weight, the Seaway debate was fundamentally political and required political capital that transcended borders, ideologies, and region-specific appeal. In the preceding chapters, I followed the dynamic activities and arguments of an array of advocates and opponents over the 62-years of debate that preceded Seaway authorization. In 1954, after decades of political and national vacillations, Canada and the United States reluctantly agreed to cooperative Seaway construction; and, over the following five years, a transnational assortment of government agencies, planners, engineers, contractors, workers, and machines remade the river.

The Seaway megaproject depicted the landscape through a high-modernism lens, but its planners' abstract visions often clashed with complex realities. For much of the dissertation, I focused on transnational processes, institutions, and discourses, but in the final chapters I transposed my analytical gaze to local domains. Construction confronted material and often-uncooperative conditions. Up close, the landscape diverged from planners' abstracted view, the environment proved less pliable than they anticipated and

seemed to resist their transformative efforts. Local communities also confronted the designs of Seaway planners and imminent displacement. The Seaway engendered a new environmental and social order, under which locals' embodied sense of self and daily spatial practices disappeared along with a landscape inundated by the Seaway's waters. The Seaway reconfigured adjacent social and physical geographies, and by doing so, correspondingly reconfigured the identities of local individuals and communities. Underscoring this whole narrative is the river – an active participant in shaping adjacent social, economic, and political geographies, it conditioned the range of technological possibility, informed the dreams of Seaway advocates, and confronted the abstract schemes of Seaway planners.

Circling back to the quote set out at the beginning, Henry Miller pled for a world of rivers fixed in time, space, and history; not rivers that exist in legend or myth. The Seaway is both – it is a symbol and a reality. The boundaries between these forms are permeable not fixed, and both are crucial to its construction and operation. This story is, at its core, an interrogation of boundaries – about two nations and the river that divides and unites them. It is also about the boundaries drawn between culture and nature, the environment and technology, the abstract and material, expertise and advocacy, as well as symbol and reality. Even the reconfigured identities of local communities are informed by a collective, mythologized sense of loss. Institutions like the Lost Villages Historical Society memorialize a symbolic representation of spaces and communities eponymously “lost.” They evince a kind of romanticized fluvial and communal nostalgia, where the boundaries between historical reality and symbolic interpretation of the past are unclear.

I titled this project *A Bond Rather than a Barrier?* to underscore the Seaway's dual identity and power. The Seaway is a potent symbol for transnational cooperation and a system that brings nations together to manage shared spaces. However, it is simultaneously a divisive force that separated people from their river and one another. It created new bonds between people but also erected new barriers. This is the Seaway's story – ambivalent legacies in contested spaces.

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