Research Themes

💧 Reveal the true extent to which the U.S. and Canada remade Niagara Falls following the 1950 Niagara River Diversion Treaty
💧 The engineering objective was to ensure the appearance of an unbroken and satisfactory crestline and the sufficient “impression of volume” while reducing erosion (see Figure 1)
💧 Explore the pros and cons of relying on hydraulic scale models (see Figure 3)
💧 I combine approaches from environmental history, environmental studies, envirotech, historical geography, STS, political ecology

Hydraulic Models

Figure 1

Niagara Falls became a type of machine blending the organic and mechanical, a hybrid envirotechnical infrastructure that is as much artificial as natural

Figure 2

Figure 3

Key Concepts:
💧 Disguised Design
💧 Flowing Façade
💧 Hydro Tourism
💧 Hydraulic Nationalism
💧 Environmental Diplomacy

GIS Images by Jason Glatz & Daniel Macfarlane

Manipulating Niagara

💧 Since the 1950s, between half and three-quarters of the river is diverted for hydropower: it is turned “up” and “down” each morning and evening, and set at 50% of volume during winter
💧 The flanks of the Horseshoe Falls were excavated (88,000 cubic yards) while the crest was reinforced, reshaped, and shrunk by 355 feet (see Figure 2)
💧 Erosion was only partially decreased
💧 In 1969, the American Falls were shut off to study the removal of the talus at the base, which was ultimately left in place

Publications

💧 >10 academic journal articles and chapters, as well as pieces in Slate, Toronto Star, and Washington Post