HAMILTON THE ELECTRIC CITY, NIKOLA TESLA AND THE FIVE JOHNS **PUBLIC ART PROJECT**

Appendix D
Historical Contexts

The intent of the following statements is to inspire *Artists* in developing their proposals by providing multiple perspectives on the historical context for this public art project.

HAMILTON THE ELECTRIC CITY
Written by Megan Hobson, CAHP - Built Heritage Consultant
Reviewed by Vic Djurdjevic - President, Nikola Tesla Education Corp.

Hamilton is proud of 124 years of clean renewable power. Since 1898, Hamilton has harnessed the natural energy of water to power its industries, businesses, private households, and public transit systems.

In 1898, Hamilton was the first major city in Canada to utilize new technology that allowed hydro-electricity to be transmitted long distances in a cost-effective way. The early implementation of this pioneering technology in Hamilton was due to the bold thinking of five entrepreneurs, all with the first name John. The 'Five Johns' formed a private power company called the Cataract Power Company. Using a recently patented system designed by the brilliant Serbian-American inventor Nikola Tesla that used alternating current instead of direct current, the Cataract Power Company built a power generating station at Decew in St. Catharines and a 56-kilometer transmission line to their station on Victoria Avenue North in Hamilton. From the main station, power was distributed to their customers that included the City of Hamilton, major industries, the Hamilton Street Railway, and several interurban railways.

Power was generated by water drawn from the Welland Canal that was collected in man-made reservoirs on top of the Niagara Escarpment and then funneled down massive penstocks into turbines at the base of the escarpment. The original wooden pole transmission line was replaced by two steel tower transmission lines that carried high voltage power overhead across farmers' fields and down the escarpment at Kings Forest. Hamilton's steel industries and skilled work force built this infrastructure, often under dangerous conditions. Electrical workers formed the Electrical Workers Union to ensure safer working conditions. American company Westinghouse collaborated with Nikola Tesla and soon became the leading manufacturer of

electrical turbines, transformers, and electrical appliances. Naturally, Westinghouse established its Canadian headquarters in Hamilton.

Hamilton was internationally recognized as the ‘Electric City of Canada’ because it had the cheapest and most reliable power in Canada, if not the world. Already a major industrial city on the Great Lakes, the new electrical infrastructure supported a huge expansion of the City’s industrial area and secured Hamilton’s place as an industrial leader in the 20th century. This massive expansion attracted thousands of new immigrants to work in the factories and settle in the new neighbourhoods that were built around them. The shoreline in the east end of the city was transformed as the natural inlets and marshes were infilled and built on. Eventually the entire waterfront would become one continuous industrial landscape.

Although industry was the first to benefit from this electrical infrastructure, it was not long before these benefits were available to everyone. Following the establishment of the Hydro Electric Power Commission of Ontario in 1911, the citizens of Hamilton voted to fund a municipal system that would distribute power to every household in the city at a reasonable rate. The Hamilton Hydro Electric System built substations in every neighbourhood and power was purchased from the Cataract Power Company and then from Ontario Hydro, once the Adam Beck power station at Niagara Falls and the transmission line across the Beach Strip were operational. The Cataract Power Company sold their assets in 1930 and the local assets were acquired by Hamilton Hydro and the Decew Station was acquired by Ontario Hydro. The Decew Station remains in operation and is one of the (or possibly the) longest operating hydro-electric stations in Canada.

Once a frightening and exciting new technology, electricity quickly became an essential service that transformed life in the 20th century and will continue to shape our city and our daily lives through innovation in the 21st century.

HAMILTON THE ELECTRIC CITY – EXPANDING THE NARRATIVE
Written by Heather George - Curator, Indigenous Histories at Canadian Museum of History & Guest Curator Woodland Cultural Centre

In 1898 Hamilton became one of the first cities in the newly formed Canada to rely on hydro electricity to power its rapidly growing industry.

Brought to Hamilton by five entrepreneurs all with the first name John, it relied on the new AC technology developed by Nikola Tesla, which allowed for transmission of electricity over long distances. Unfortunately, the "Five John's" did not adhere to Tesla's vison of inexpensive and accessible power for all and while they built a successful hydro-electric empire most Hamiltonian's could not afford electricity to their homes and felt ill served by the monopoly. By 1903 the debate between public and private power led to the Hamilton Trades and Labour Council publicly supporting politician Adam Beck in his campaign for a provincially funded hydro-electric network. In 1906, 10,000 Hamiltonians filled the streets to protest Cataract's treatment of striking street railway workers. In early 1907, a coalition of labour representatives, city councillors and conservative reformers passed a municipal plebiscite approving the purchase of Public Power from the newly formed Hydro-Electric Power Commission. Over the next four years, Hamilton was integrated into the provincial system and set up its own hydro commission.[1]

On July 1, 1914 Adam Beck flipped the switch for the city's new street lighting system; Hamilton Hydro trumpeted its benefits: "Hydro-electric is the People's Project and every citizen is financially interested…the more customers, the lower the rates." When Ontario Hydro began to distribute power, it reduced prices by 87%.[2] Cataract continued to serve many of the city's industries until it was absorbed by Hamilton Hydro in 1930.[3]

Hydro electricity is often seen as a "natural power source," and while the city boasts many waterfalls which had been used to run mills in the past, Hamilton's hydro-electric power was generated by water drawn from the Welland Canal. Originally envisioned as a way to by-pass Niagara Falls, the first canal was completed in 1829. To supply enough water for first canal, a feeder canal and dam were constructed in 1828 at Dunville on the Grand River. The dam raised the river level over six feet flooding over 2000 acres of land. By 1881 water for the canal was being drawn directly from Lake Erie, and although Six Nations of the Grand River made claims for land loss in 1890, to this day they have not been compensated. [4]

[1]Workers Arts and Heritage Centre, "Workers City: Hamilton Hydro-Electric System" 2020, retrieved from: https://www.workerscity.ca/hamilton-hydro-electric-system
[2] James H Marsh, "Adam Beck and the Creation of Ontario Hydro," 2019, retrieved from https://www.thecanadianencyclopedia.ca/en/article/adam-beck-and-the-creation-of-ontario-hydro-feature
[3] Workers Arts and Heritage Centre, "Workers City: Hamilton Hydro-Electric System" 2020, retrieved from: https://www.workerscity.ca/hamilton-hydro-electric-system
[4]Six Nations Lands and Resources, "6. Welland Canal (Feeder Dam) – 2,415.60 acres" 2008, retrieved from: https://www.sixnations.ca/LandsResources/cslc6.htm#:~:text=On%20January%2027%2C%201890%2C%20the,the%20Exchequer%20Court%20of%20Canada.

Hydro-electricity, like all power sources has a complicated history. Hamilton promoted itself as “The Electric City” and new industry brought employment and wealth to many, growing a diverse workforce and city in the process. However, the rapid expansion also presented many challenges in an era without legislated environmental protection. The shoreline in the east end of the city was transformed as the natural inlets and marshes were infilled and built on. The health of both the land and water as well as fish, waterfowl and animals were dramatically impacted. These inlets and waters formed part of in important food network for the Atirhaguenrek (Attawondaron /Neutral) Haudenosaunee (Six Nations) and Mississauga since time immemorial as well as settler and newcomers to the region and their demise further reduced access to wild food sources. Eventually the entire waterfront would become one continuous industrial landscape.

Today Hamilton’s waterfront continues to be a reminder of the complex negotiations of power, industry, environment and people.

Anthony Raso, “Brief History,” retrieved from: https://www.wellandcanal.com/hist.htm#:~:text=The%20Second%20Welland%20Canal&text=Construction%20on%20the%20canal%20began,year%20prior%20to%20the%20expansion.

Alun Hughes, “The Feeder Canal and its Communities” Newsletter of the Historical Society of St Catherine’s, 2007, retrieved from: https://brocku.ca/social-sciences/geography/wp-content/uploads/sites/152/The-Feeder-Canal-and-Its-Communities.pdf