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GIS Trends

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From the Hip – My Experience with an Interdisciplinary SSHRC Grant

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Editor's Introduction

Please welcome as guest author our long-standing colleague and friend Colleen Beard, Librarian Emeritus, Map, Data and GIS, Brock University. Colleen's account of her ongoing research opens our eyes to the fascinating environmental history of the Welland Canal. She shares her experience of involvement with a SSHRC Insight Development Grant-funded project, and explains how knowledge of local environmental history and the varied technical skills of our trade have much to add to academic partnerships. As we redefine the nature of our work and reconsider research library mandates, the trend towards becoming full partners in research is important - a wonderful challenge and opportunity for many of us. Thank you, Colleen for continuing to inspire and lead us! We'll see you at Puddy's Bar & Grill for the next HWCMP talk!

A few years ago, it was a little-known fact that buried on the bank of the Old Welland Canal, in downtown St. Catharines, is a 19th century canal schooner – the James Norris.

It certainly grabbed my interest when Dr. Kimberly Monk, Historical and Maritime Archaeologist, asked if I'd be interested in joining "the crew" to recreate a historic maritime landscape - the Shickluna Shipyard c.1840.

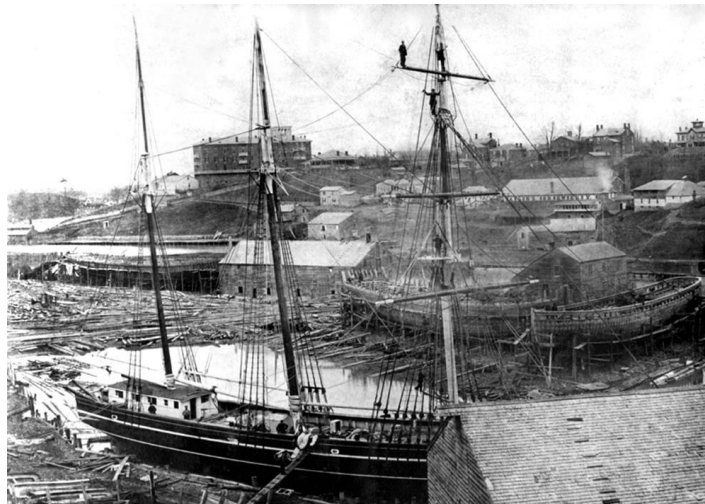


Figure 1. Shickluna Shipyard, 1874. Image courtesy of St. Catharines Historical Museum

Although my knowledge of maritime archaeology is indeed limited, I was sought out to join the team that was successfully awarded a two-year SSHRC Insight Development Grant entitled *Visualizing past landscapes: Toward reengaging the local historic environment*. Yes, it is a rich title, but the goal admittedly is to some day uncover the James Norris c1854 that sits submerged in the now filled basin of the old Shickluna Shipyard - and I want to be a part of it!

If there is one thing I've learned throughout my career it is that the unique skills and knowledge that GIS, map and data librarians possess are undeniably valuable. Perhaps we know this but it is often underestimated. However, not only did the librarian and GIS/data skills seem to be sought out talent for the project, but my expertise of the local canal landscape and the creation of the [Historic Welland Canals Mapping Project](#) (HWCMP) was indeed an asset. This is one aspect of my experience I should emphasize. As librarian, part of my job responsibilities was to engage in research. Over many years my studies focused on the three historic Welland Canals that meandered through St. Catharines leaving a legacy of spectacular landmarks. The use of GIS technologies to bring this history alive through interactive visualizations has gained much attention and recognition with the general public, the Brock community, and beyond. Many of my librarian colleagues have applied their GIS skills into similar creative and impressive HGIS research ([Fortin & Bonnell, 2014](#)). These skills are unique and often seen as difficult to hone by a typical researcher. But because they can be applied to any discipline, coupled with a bit of creativity, we can contribute greatly to any grant project.

The opening of the Welland Canal in 1829 opened a new route for exports of key staples such as timber and agriculture and led to the establishment of a maritime community which supported the demands of a growing region. It was the main economic activity in Niagara in the 1800's and shaped many communities. The establishment of shipyards was critical to enabling export of high-volume, low-value bulk cargoes on the Great Lakes-Atlantic route and was central to economic development. However, much of the shipyard history is now masked by the built landscape. But the Shickluna Shipyard remains largely abandoned and the filled basin, undisturbed. Although boathouses and the yard buildings no longer exist, potential for archaeological study is high.

In the summer of 2019, as part of the grant requirements, Dr. Monk ran a credit archaeology field course out of the Department of History, Brock University, using the Shickluna site. But this did not come easy. Although we were fortunate that the shipyard sits on city-owned property, the hurdles we had to circumvent were many. Permissions to access the site, insurance, educating city politicians (most unaware of what lurks below on their property) with reports and presentations, etc., is credited to Dr. Monk's tireless efforts and determination. Meanwhile, my first task was to help establish the best location to "dig". Assisting Dr. Joe Boyce, McMaster University, with GPR (ground penetrating radar) reconnaissance of the entire site, the marine environment was not ideal for GPR producing little evidence of submerged remains. Relying on resources from the Welland canals mapping project, I created the [Shickluna Mapping Project](#).

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Figure 2. Shickluna Shipyard Mapping Project. Location of Operational Areas (dig sites). Image courtesy of Colleen Beard

Based on information gathered from historical maps and photos, a GIS overlay was created to show historical buildings within the shipyard, and the location of the basin with the buried James Norris. Using field techniques such as ArcGIS Collector, we were able to establish three pits, one adjacent to the boathouse; one near the ship; and the other adjacent to the workers' living quarters. This resulted in uncovering over 3000 artifacts – from toilet seats to gin bottles to ceramic figurines – some would describe it as 19th century garbage. But lovely garbage, it is!



Figures 3 and 4. Samples of uncovered artifacts. Photos courtesy of Kimberly Monk

As part of the course curriculum, I gave a talk on the mapping project including the detailed process for locating the “dig” pits, or operational areas. I also led the students on a canal tour as an orientation for “placing” the shipyard in historic context. Throughout the summer the project’s progress was documented by social media, such as Twitter and Facebook. The University’s *Brock News* was especially instrumental in raising the profile of the project through news features. Later that summer we ran open-house weekends for the general public and local dignitaries to tour the Shipyard; view some of the artifacts; to learn the Louis Shickluna story and the impact his shipyard had on the local community, and sell t-shirts. Using GIS field techniques, we chalked the outline of the submerged ship. The event generated a frenzy of interest from the local community, the local media, and gained an extensive network of *Friends of Shickluna*, including a distant relative of Shickluna. We meet regularly at the historic *Mansion House* c1800 pub (once a store of Hamilton Merritt – the founder of the Welland Canal). More importantly this sparked numerous news articles, radio interviews and greater attention from local politicians and the business community – potential funders for the larger picture! <https://www.facebook.com/shicklunashipyard/>



Figure 5. Shickluna Shipyard, 2019. Outline of the location of the buried James Norris schooner. Photo courtesy of Colleen Beard

This SSHRC grant is a two-year project which aims to: “Develop a framework for reengaging local historic environments; to devise an approach to geo-visualize archival, archaeological, geophysical and environmental data within 3-D model simulations; create tree chronologies for the Niagara Region, toward interpreting historical and industrial impacts; retrace 19th century transport zones within the Great Lakes; generate software to create Narrative Objects, and multi-modal narratives expressed in Virtual Reality and Augmented Reality.” (excerpt from the grant submission, 2018). It is important to realize that this is an Insight Development Grant – an ideal steppingstone for subsequent full grants and funding to realize the “ultimate goal” - unearthing the James Norris.

The diverse line-up of grant co-applicants is a great example of building on the expertise of other disciplines working towards a common goal. It seems this is an extremely appealing element with successful SSHRC grants. Leading the project is emerging scholar Dr. Kimberly Monk (History, Brock University), who is a trained maritime historian and field archaeologist, interested in the connections between historic environments, the nature of maritime trade and warfare, and the design of ships. This project builds upon previous research undertaken for her Master’s Thesis involving the Welland Sailing Canaller *Sligo*, built by Louis Shickluna in 1860 at his St. Catharines shipyard. Established scholars include: Dr. John Bonnett (History, Brock University), an expert in the digital humanities, specializing in the application of 3-D modelling, including the emerging mediums of Virtual Reality (VR) and Augmented Reality (AR); Dr. Michael Pisaric (Geography, Brock University) who examines the role of paleoecological indicators, toward understanding climate change; and Dr. Joe Boyce (Earth Sciences, McMaster) employs geophysics and geo-archaeological methods to document paleoenvironmental changes in lakes and coastlines. With my expertise in GIS and the Welland Canals, I lead the geo- visualization aims of the project, integrating archaeological, historical, geophysical and environmental data using geospatial mapping technologies. This basically means mapping any data that is generated by all partners of the project, in coordination with the co-applicants.

As a librarian, I also emphasized the importance of including data management practices in the SSHRC Grant application - such as those supported by the Alliance’s Portage Network. My role also includes the design of a Data Management Plan (in progress); implementing metadata standards; data storage; and all that stuff that comes with data sharing. Often overlooked, this inclusion is so very important in today’s competitive climate of successful grant funding.

Over the past several years I have given over 20 canal talks to various groups, including ACMLA. The HWCMP is technical, but I’ve become a storyteller in attempts to relate to the not-so-tech- savvy citizen. If there is any advice I can offer it’s to limit the academic content and focus on entertaining your audience. Stories of how I encountered coyotes on my canal hikes; discovering other shipwrecks on the canal using historic air photo overlays; Dynamite Luke’s attempt to blow up Lock 24 in 1920; and marveled at scenes like this one (*Figure 6*), and how I got inside lock 12 chamber to do 360 filming. More importantly, how I got out!

Our personal knowledge of local history and the use of GIS to share it can be very powerful. Creating visualizations that engage the public is extremely rewarding and takes very little to impress, I’ve learned. But one must keep in mind that user experience is critical. Ease of use and simple to navigate is key.



Figure 6. 360 filming in Lock 12 chamber, Third Welland Canal. Photo courtesy of Rene Ressler

I became involved with this project during my last “working year” followed by a sabbatical. It was an early retirement incentive. It resulted in a very fluid transition rather than a “what do I do in retirement?” conundrum. As Emeritus status, my research continues with all the resource perks the university has to offer.

The momentum gained in the first year of the project in 2019 was, of course, placed on pause because of the pandemic. However, recent permissions from Brock, the city, and the province will mobilize the project again this summer 2022 with another field school offering. And what was a little-known fact about the buried James Norris a few years ago, has morphed into a full-scale community embraced mission.

GIS Trends: Note from the Editor

Submissions and Feedback

GIS Trends is a place to share ideas, observations and discoveries in the area of GIS and other spatial technologies. If you have something you would like to share please write to me. We also welcome feedback on GIS Trends articles. Proposals for articles and feedback should be sent to: bnamirowski@trentu.ca Thanks for reading and contributing! Barbara Znamirovski, Editor, GIS Trends