



THE LOST VILLAGES OF WEST BOYLSTON

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Abstract

The Lost Villages of West Boylston, MA were an industrious community on the economic incline during the 19th Century. In 1897, the land comprising the Lost Villages was commissioned for use in the construction of the Wachusett Reservoir. With this, the collapse of a once prosperous town began. The story of these Villages and its residents were lost with time yet the Reservoir still stands. This project served to uncover this forgotten history and bring the Lost Villages back to life through modern technology. A blend of techniques encompassing the digital humanities and 3-D design were utilized to create a compelling and historically accurate narrative and recreation of the Lost Villages.



Figure 1: Old Stone Church¹⁴



WPI

An Interactive Qualifying Project submitted to the faculty of Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science



Preface

Originally, our project team was slated to travel to London, England, to take part in our Interdisciplinary Qualifying Project. Unfortunately, these plans were cancelled due to the Coronavirus Pandemic.

Our project was completed primarily remotely from Worcester, Massachusetts. We hope that this project stands as a testament to the resilience of our project group and our peers from the Worcester Polytechnic Institute.



Figure 2 W.F Coolidge Drugstore Model



Figure 3: Current View of Wachusett Reservoir Overlaid with Source Material Map

Introduction

The preservation of history is an important part of the human experience that allows us to understand, examine, critique, and celebrate where we have been as a society. A unique aspect exclusive to human beings is the capability of sharing prior experiences and accounts with following generations in the form of history. The beauty and importance of history is that it stops time in its tracks, permanently engraving immediate life in evidence. History has the power to preserve the memories of civilizations and communities lost to time, movement, and progress. This is especially important when considering the history of those communities that were displaced by cataclysmic events of nature and of human creation.

One such lost community is the Lost Villages of West Boylston. Displaced by the creation of the Wachusett Dam from 1897, the Lost Villages are a distant memory or a complete mystery to the current residents of the town. They are not lost, however, to town historians and archivists, nor to the creator of the project “Before There Was a Dam,” Professor Paul Marrone. The project, a comprehensive multimedia website featuring photos, maps, archival material, and stories, is an attempt to discover, curate, and preserve the historical documents and memory of the town that was erased by what is considered a critical piece of Massachusetts’ water infrastructure. While the creation of the dam was a critical engineering and infrastructure improvement for the state, it left behind the livelihoods, communities, and stories of the Lost Villages.

For this interactive qualifying project (IQP), our team worked to help re-create and document a critical section of the Lost Villages and to understand what previously existed in the water of the Wachusett Dam. Through artifact creation and digital storytelling, we created a project that gave a robust retelling and 3D model of the town. In our research, we sought to answer questions such as: What is the significance of the village of West Boylston in history the of the region and in relation to the Wachusett Dam? Why is it important to preserve that history and create this archive for the town? How can technology aid in the preservation and rediscovery of lost stories and history? The following report will describe the process we undertook, the research we conducted, and the final deliverables of the project that have been presented both to public and within-WPI audiences.



Figure 4: Catholic and Old Stone Churches ¹⁴

Background:

Digital History

Digital history played an integral role in our narrative about the Lost Villages of West Boylston.

Digital history, as defined by the Inclusive Historians Handbook is “an approach to researching and interpreting the past that relies on computer and communication technologies to help gather, quantify, interpret, and share historical materials and narratives”.¹ By doing this, it enables organizations of individuals to preserve and tell the stories of what once was. By implementing technology, historians have new ways to analyze data, as well as the opportunity to put their data into a visualization. Technology and newfound digital historical methods not only enable historians to better gather and visualize data, but they also allow them to share this data to a wider audience. The whole point of historical study is to share findings and spread them to others, so adding the digital side to it allows historians the ability to share their findings on a worldwide scale.

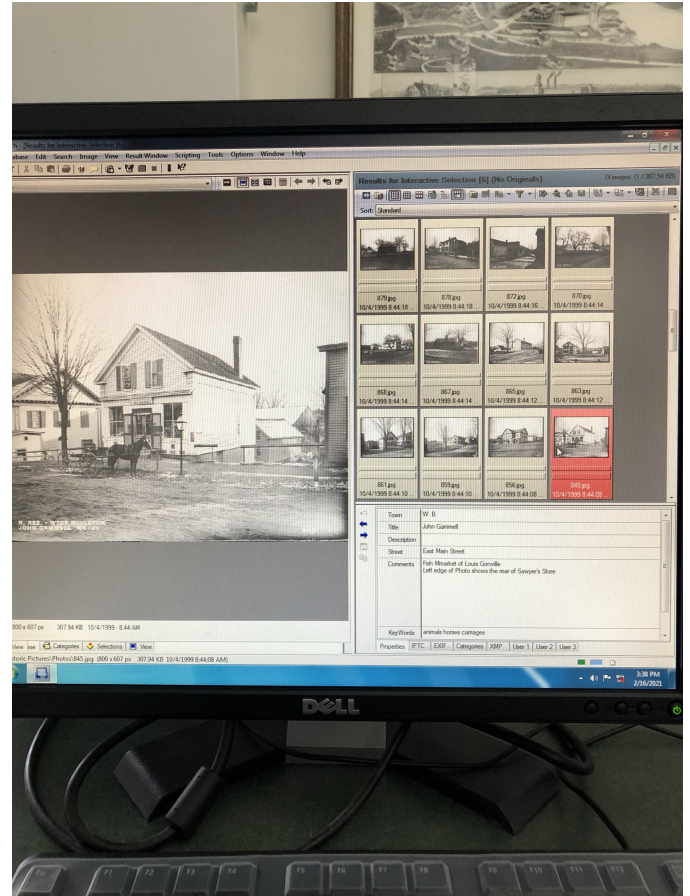


Figure 5: Computer at the Beaman Library

Our project about the Lost Villages of West Boylston was a perfect exemplar of digital history. Our main source of data came from a database of about 1,200 archived photographs of West Boylston properties that were recently digitized. This database of photographs gave us the ability to digitally re-create the town with a picture-perfect accuracy of what the Lost Villages looked like before they were flooded. This modelling technique allowed us to generate a realistic walkthrough of the villages, which was later placed into a historical website to tell the story of what once lay beneath the Wachusett Reservoir.

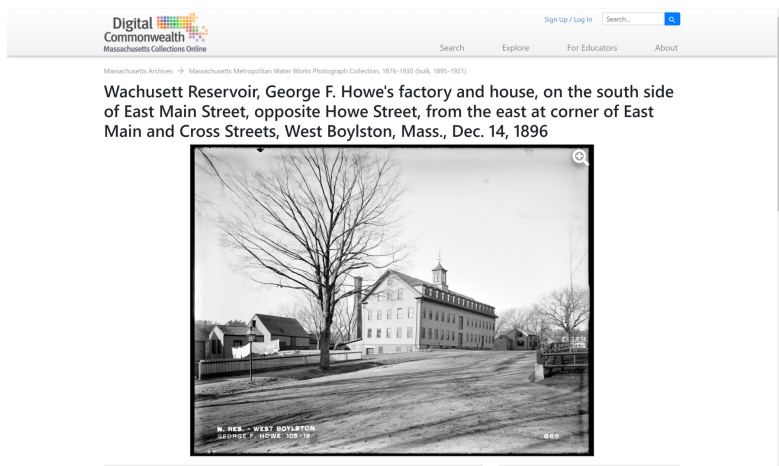


Figure 6: Snapshot of Digital Commonwealth

Historical Storytelling and Technology

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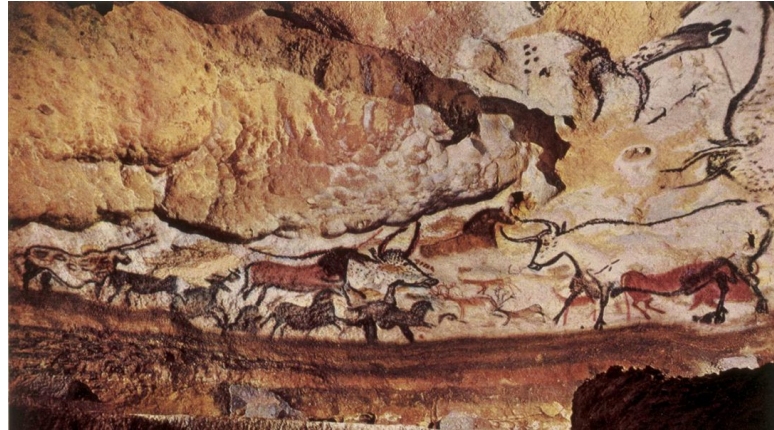
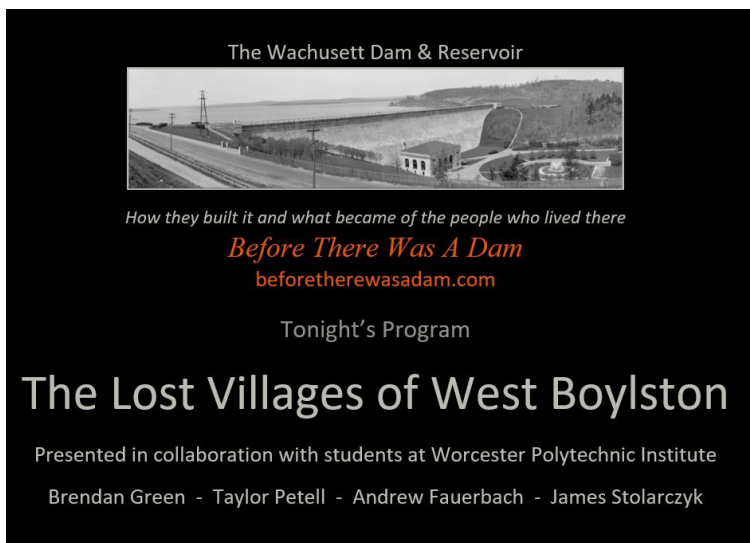


Figure 8: The Original Form of Storytelling

The earliest forms of record keeping were not the sophisticated storytelling we know today, but rather observations of the simplicity that was life. From early homo sapiens' cave drawings to our current multimedia story mapping, the practice of storytelling has evolved greatly over the millennia. As things progressed from the Stone Age into established civilizations, recorded history followed in accordance. The first written records date back to approximately 5,000 years ago in ancient Egypt and Sumer.⁴ While not the form of historical records we consider today, it provided details of ownership and lifestyle. A few centuries after that saw the rise of the familiar record keeping that we see today. Maps were created, and importantly, written documents began to hold heavier weight than oral recounts due to an inability to change written accounts. Societies became more interconnected and started exchanging accounts.

As discussed previously, the rise of digital humanities in the past fifteen years has promoted other aspects of humanities, and thus become more understood by many people. One aspect of digital humanities that we used in our project was 3D modeling, specifically using it as a form of storytelling. A main goal of ours was to bring the Lost Villages to life for our audience (West Boylston citizens, professors, family members, and anyone curious), so this combination of technology and historical storytelling was essential to discuss. This storytelling about the Lost Villages through technology helped resurface old and forgotten narratives by captivating the attention of the audience which led them to learn more about the topic.



The Wachusett Dam & Reservoir

How they built it and what became of the people who lived there

Before There Was A Dam

beforetherewasadam.com

Tonight's Program

The Lost Villages of West Boylston

Presented in collaboration with students at Worcester Polytechnic Institute

Brendan Green - Taylor Petell - Andrew Fauerbach - James Stolarczyk

Figure 9: Lost Villages Library Presentation

Historical Storytelling and Technology

The reason technology (in this case, a 3D model and a website) assists storytelling is because it supplements the story very well by making facts and historical evidence more accessible and entertaining. When we were on Zoom in front of an audience of dozens of West Boylston citizens, we recognized it was important to maintain a balance between keeping our audience engaged as well as educating them and sharing our findings. Not only did the 3D model help bring the story to life, but it also kept the audience entertained. This, in turn, helped them stay engaged, learn more, and acknowledge that the preservation and presentation of their own town's history can be greatly enhanced by technology.

While traditional storytelling through the written word and oral traditions is compelling, technology can enhance the experience. Simulations can bring models and human experiences to life. Without the visual and real-life simulation that 3D model storytelling provides, the audience for our project would be somewhat lost on what information we were trying to present. Details such as the visualization of the buildings and placement of the streets were more accessible through the model. A story aided by a 3D model engaged the audience and captivated their attention more effectively than simply facts or even a story without a walkthrough. On the other hand, if we were to present a 3D model and walkthrough without a story, the audience would most likely lose interest or wonder what exactly the purpose of the presentation was.

In summary, the combination of telling a narrative while using technology in the form of a 3D model helped the audience not only learn about the Lost Villages, but also remain entertained and thus enjoy the presentation.

Merging technology and historical storytelling is beneficial, but it is also important to consider how technology not only helps present and tell historical stories, but also helps preserve them. The current world we live in is constantly evolving, and when the world is talking about the latest and greatest technology, historical stories are easily lost in the rush. Most archives, whether those are documents, pictures, or a combination of those, risk the potential of being lost in a library, town hall, historical society, or museum, left for some historian to search through and interpret. It takes time to bring archives together to tell a story, which is essentially what our project team tried to accomplish through this IQP.

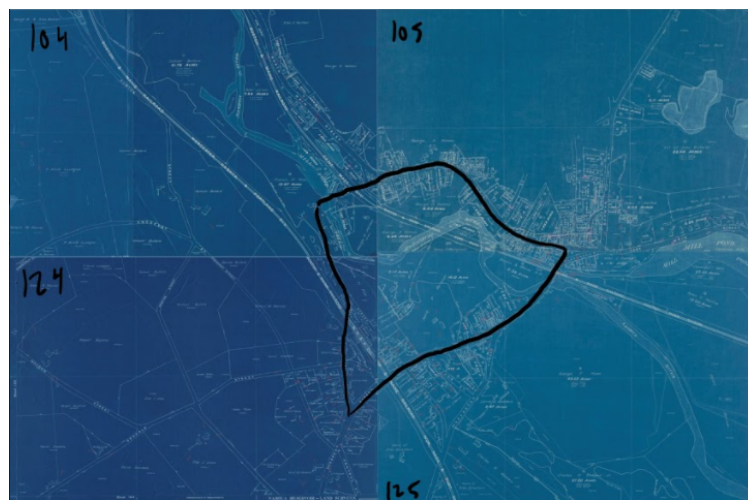


Figure 10: Walkthrough Route on Map ¹⁴

Historical Challenge

Many obstacles and challenges come with completing historical research. Perhaps the biggest obstacle is the limitations of one's research. Formal documentation and preserved archives only provide fragmentary insight into the past. Nothing is perfectly recorded, nor is it easily interpreted. This was especially relevant with this project. The name, "Lost Villages," indicates the major challenge presented with this research: it was lost (to most people without archival access and training). Lost is used not in a definite sense but rather to suggest that evidence of the historical records' existence is scarce.

Once the historical research begins, the challenge shifts to proper evidence and documentation. It is crucial for it to be factual. The insight, reflections, and claims that accompany historical research must be rooted in tangible evidence. The challenge comes in to play when trying to prove an insight you have but lacking the critical piece of evidence to secure the claim. This can be especially challenging since assumptions and hunches play a large role in a compelling, well rounded report.

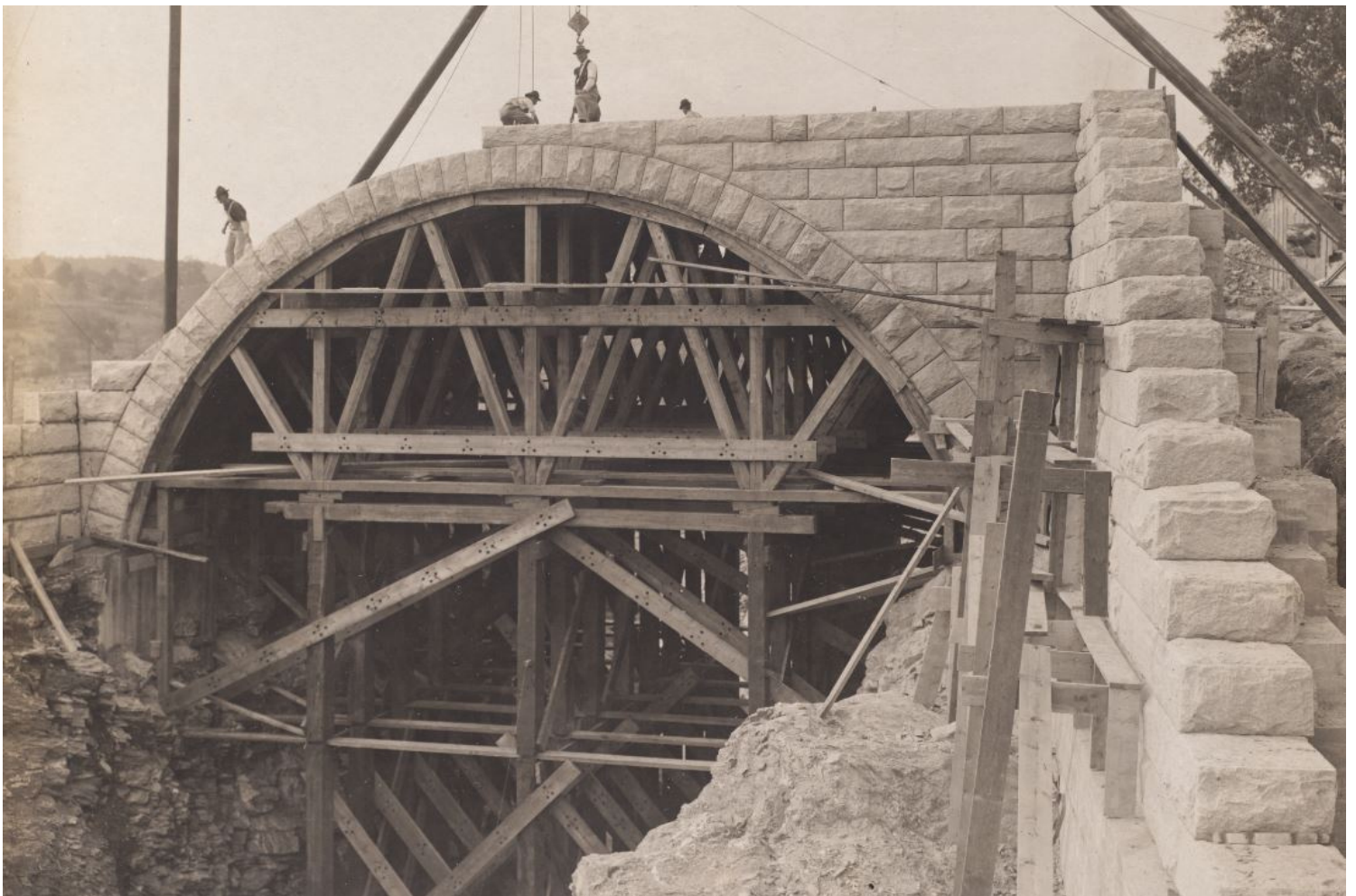


Figure 11: West Boylston Arch Under Construction

History of West Boylston

The town of West Boylston, Massachusetts was formally established in 1808, and was comprised of land from the towns of Shrewsbury, Boylston, Lancaster, Sterling, and Holden. In the 18th century, the land was settled by colonists who were drawn to the area due to high soil fertility and water source accessibility. This geographical advantage, provided by several surrounding rivers was the potential for industrial development via mills. With time, West Boylston transitioned from an agricultural town, with apple and rye farms, to a manufacturing community, with textile mills. After its formal recognition as an independent town, West Boylston experienced a high rate of growth and development. By 1890, the town contained 3000 thousand residents, five churches, ten schools, and several mills. The primary mill industries included looms, carpets, footwear, baskets, and general textiles.^{5,6}



Figure 13: Old Stone Church, West Boylston

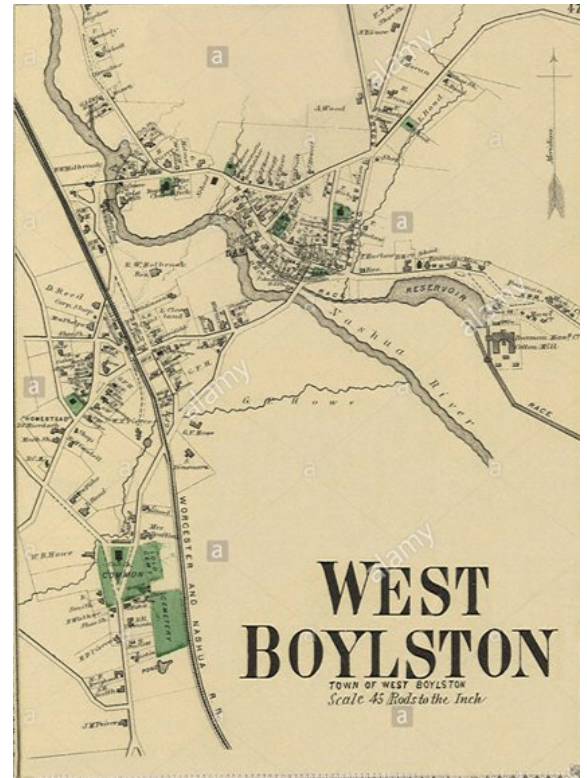


Figure 12: West Boylston Map

Unfortunately, the same reason for West Boylston's success ended up being its industrial demise. The accessibility to water sources led a major portion of the town to be sanctioned for use in the construction of the Wachusett Dam and Reservoir. This portion of the town would come to be known as the Lost Villages of West Boylston. From 1896 to 1905, the town endured the building of the reservoir and saw the destruction of most of its industry. The Villages lost most of its mills, farms, churches, schools, acres of fruit trees, and houses. Over 1700 residents were displaced and forced to relocate. The project cost a total of 11 million dollars and most of West Boylston's industry.⁷

Construction & Significance of the Wachusett Reservoir

Construction began on the Wachusett Dam in 1897; work was completed in 1905, and the bridge overlooking the dam opened to the public the same year. The reservoir was first filled in May of 1908. At that time, the Wachusett Reservoir was the largest public water supply in the world. The decision to use the Nashua River as the source for the Wachusett Reservoir sealed the fate of the village in West Boylston, and what remains of those flooded villages in West Boylston has been underwater since then. A lot of the buildings, homes, and mills were either knocked down or moved prior to the flooding. Even some of the Central Massachusetts Railroad tracks had to be relocated in order to avoid being flooded.



Figure 14: Wachusett Reservoir Construction ¹⁴



Figure 15: Wachusett Reservoir Construction ¹⁴

The only building on high enough ground to survive the flooding in the Lost Villages was the Old Stone Church. The Wachusett Reservoir, located in Clinton, MA, was built to distribute water to 29 municipalities, including Boston. "Water from the Wachusett Aqueduct could be released into the reservoirs of the Sudbury River system for transport to Boston via the Sudbury Aqueduct. Water from the Wachusett Reservoir could also flow through the new Sudbury Reservoir to the Weston Aqueduct"⁸. The reservoir was crucial to the infrastructure of Massachusetts and is the reason why the Lost Villages are considered "lost" today.

Dynamics of The Lost Villages

The Lost Villages were the most commercially successful portion of West Boylston in the 19th century. The Villages were comprised of three primary districts: Upper Village, Lower Village, and Central Village. The Upper Village was located the furthest up the Nashua River and featured the mills. Central Village was institutional and a hub of culture in the Lost Villages, featuring churches and schools. There were several religions present, the two most prominent being Protestants and Catholics. Lower Village was primarily residential and consisted of homes, markets, restaurants, bars, and halls. The Lost Villages also had two train stations along the Central Massachusetts Railroads (CMRR).

The development of these rail tracks consisted of a series of track mergers, company buyouts, and legal actions. The end goal of this rail development was to connect Boston to western Massachusetts. Financial issues and natural disasters led to the railroad company filing for bankruptcy in 1883, ending the dreams of expanding west. Luckily for the Lost Villages, this railroad integration allowed the area to develop commercially and economically. Freight and cargo became massive industries and allowed the Villages to compensate for the loss of farmland due to industrialization. The grain and flour were major imports, while exports consisted of factory and mill products like footwear and cloth. Information on the development of the railroad is located here.⁹

The Villages were also home to many successful merchants of the time. Henry Oliver Sawyer was a major historical figure in the town and owned several shops and businesses. He was a Civil War veteran, undertaker, and politician for the town who would later become the mayor of Fitchburg, Massachusetts in 1904.^{10,11} Similarly, George Howe was largely responsible for a lot of the industrial development. Much of his work revolving around mills and factories played a major role in the development of textile mills across New England. George's influence included Pemberton Manufacturing Company, Cocheco Manufacturing Company, Hooksett Mills, Massachusetts Mills, Blackton Mills, Stark Mills and Cordis Mills. He also conducted business in Boston as well, which was made easier by the CMRR.¹² Louisa Sawyer was an influential feminist and highly successful businesswoman, which is notable given the time period. She owned a carriage supply store which featured the claim that "Prudent Woman Trade with Sawyer". Additional information about the Lost Villages can be found in our supplemental material.



Figure 16: Charle's Flagg's House¹⁴

Dynamics of The Lost Villages

It is evident that by the end of the 19th century, West Boylston was a rapidly developing, industrious town, with several markets and opportunities.

West Boylston of the year 1895 - a prosperous, growing community with thriving industries, schools and churches... an excellent library, and with confidence in its future development...but the West Boylston of 1895 was no longer a calm retreat, and its inhabitants suddenly felt the sorrows and cares of the world to be overwhelming. (Hamilton, 1954, pp. 90-91)

Tragically, all the inhabitants of the Lost Villages had their lives completely uprooted with the construction of the Wachusett Reservoir.



Figure 17: John McQuillan's Brick Block (C.A Duso)

The Collapse of The Lost Villages

In 1893, the General Court of Massachusetts assembled in Boston to discuss the need to supply additional water to the Boston Metropolitan area. The residents of West Boylston were largely left unaware of this process leading to no initial backlash or ill will. To local residents' knowledge, West Boylston was merely being investigated by the state Board of Health for the next two years. During these two years, the evidence was collected that would seal the fate of the Villages and their inhabitants, industries, and property.⁷

From 1893-1895, engineers and officials from the newly created Metropolitan Water Board, surveyed the land comprising the Lost Villages and calculated estimates relevant to this massive construction project. For two years, all of this was done at the ignorance of West Boylston residents. The board also assessed the potential of using the Merrimack River and Lake Winnepesaukee. "At this time, the following water sources were considered: the Nashua River, Lake Winnepesaukee, Sebago Lake, and the Merrimac River".⁸

Lake Winnepesaukee was removed from eligibility due to the high recreational traffic the lake experienced during the summer months, which would inevitably pollute the water. The Merrimack River no longer became an option when the Board assessed the filtration costs would be much higher than that of the Nashua River. The Nashua River was sparsely settled, could easily connect to the Sudbury, MA water system, and featured the potential to expand to the Ware River if necessary.⁷ With water shortage being the primary concern, one can understand why the potential for expansion was appealing to the commission. The chief engineer of the Metropolitan Water Board (MWB), Frederic Stearns, decided that he wanted the source to be gravity-operated.⁸ All of these factors made the Nashua River the most clear-cut choice. Regardless, when analyzing this situation historically, one can identify several ethical flaws with how this process was carried out.



Figure 18: Louisa Sawyer's Stable Model

The Collapse of The Lost Villages

The MWB made it clear that their priority was obtaining the land under any circumstance. They justified the displacement of residents and abolition of industry through their ability to pay everyone off. They were too financially powerful to the point where it outweighed the sentimental value, as well as the economic progress and potential, of the land and the MWB knew it. They then proceeded to pay residents approximately sixty cents on the dollar for their land.⁷ With the purchase of their land, residents saw their beloved businesses, factories, schools, and churches disappear. The following quotation by the Lost Villages School Committee encompasses the attitudes and sentiments to the matter. "We are aware of the sentiment in town of discouragement in view of the terrible fate that has been decreed and is now hanging over us...how soon shall we be called to abandon our homes and all our rights and duties here." (Hamilton, 1954, p.96)

The foreclosure of so many West Boylston business, schools, and churches crippled the town's economy. Schools condensed, making teaching jobs scarce. Parishes struggled to maintain funding after relocation. All of the Village's mills were sold losing hundreds of jobs. After sale, some mills tried to relocate in western Massachusetts and New Hampshire but close within five years. The mill workers especially felt resentment as only workers of the West Boylston Manufacturing Company and the Clarendon Mill were offered relocation. Many did not want to leave West Boylston and were forced to choose unemployment. Those who did choose relocation proceeded to live through the failure of these once booming companies. "By the year 1902, then all major industries of West Boylston were no longer in existence" (Hamilton, 1954, p.107).



Figure 19: West Boylston Station Model

The Collapse of The Lost Villages

Residents of the Villages experienced financial burden for years to come as well, with the tax rate rising from \$7.00/\$1,000.00 to \$11.40/\$1,000.00 within a year after industrial collapse. The impacts of the reservoir were so widespread that it had even developed ethnic issues. Many residents were angered over the MWB employing Italian immigrants rather than the 70% of West Boylston residents who were native born. Job preference was supposed to be given to residents of Massachusetts, especially considering how many people lost their jobs from this project. Italian laborers had difficulty adjusting to life in West Boylston. Relationships between the immigrant workers and the townspeople were often tense. Some of the Italians got involved in drinking and selling liquor, an illegal activity in West Boylston at the time. There were even multiple instances of stabbing, one which even resulted in death. All the culprits were intoxicated laborers.⁷

Also, even in the earliest years of the dam's construction, tramps (homeless travelers) came to town looking for work. Due to these events, and according to the terms of the Metropolitan Water Act, the MWB was required to provide additional police protection. However, the Italian laborers had to be kept content enough to continue working, so festivals were thrown for them every so often. A lot of older residents who got set in their ways became horrified at what was happening in their town. "During the period when the reservoir was being constructed, the town faced other emergencies which were not all directly traceable to the building of the reservoir" (Hamilton, 1954, p.122).



Figure 20: George A. Flagg & Odele Grenier's Duplex Model

The Collapse of The Lost Villages

However, the rapid industrialization of West Boylston came with a bright spot. The town hall was constructed in 1904, and it provided great infrastructure to West Boylston as it had many offices for town officials, even a dining room and a library as well. Most importantly, it played a role in commercializing West Boylston, as a town hall is commonplace in Massachusetts towns today. "If by any chance a West Boylston resident who had left his native town in 1895 returned in 1907, he did not, in all probability recognize it. Gone were the scenes of his childhood!" (Hamilton, 1954, pp. 117-118)

These residents gave up everything they had spent their lives working for in such a short period of time and they had absolutely zero say in the matter. Their childhood homes, memories, and livelihoods were stripped from them for strangers, dozens of miles away. George Howe was one of the many citizens of West Boylston who tried to defend his town from the seemingly inevitable flooding. He was an upstanding citizen with a record of public service and the town treasurer for 32 years.⁷ Everything George had was taken from him, and he is only one example. Despite these stories, the Wachusett Reservoir is historically praised as a major construction, engineering, and social accomplishment. This served as inspiration for our team to keep the story alive and remind everyone that nothing is expense free and often societal benefits are accompanied by great sacrifice. It should be noted that the residents eventually got past their initial resentment and eventually saw the reservoir as a point of pride.



Figure 21: John McQuillan's Brick Block "C.A Dusoer"¹⁴

Historical Significance of The Lost Villages:

The Lost Villages are a worthy investigation site for a project employing the digital humanities . Every member of the community not only had a story to tell, but also likely owned a residence, maybe even a business, and held a lot of memories. A lot of these were literally washed away when the town was flooded. West Boylston lost 2,200 acres of land, the most of all of the impacted towns. Over 1,700 residents, 300 homes, 8 schools, 6 mills, 4 churches, and 1 hotel were relocated, but most of the town was demolished and flooded.^{5,6}

What makes this piece of history so significant is not only the intricacy of the lives of the people who used to live in a town that is now underwater, but the rarity of knowledge known about the Lost Villages of West Boylston. This story is not one that would be found in a school textbook. The Civil War was a monumental time in our nation's history, and it happened about thirty years before the Lost Villages were flooded.

While the Lost Villages are not as historically important as the Civil War, a notable amount of moments were captured during this event. That is why our goal for this project was to recover as much of that history as we could, and tell the stories of the residents who used to live there and the buildings that used to sit there.

We also delved into the reasoning behind why Massachusetts Officials made the decision to flood this portion of West Boylston specifically. West Boylston was the most logical and cost effective location for the construction of a dam but the cost was more than financial. The cost was homes, jobs, memories, and an economy. The goal was to explain the story behind these answers and transform them into a cultivating, visual experience, in order to showcase a major piece of West Boylston history.



Figure 22: Exerpt from "The Weekend (1897)

Technology, Storytelling, & The Lost Villages:

When technology is used in collaboration with these archives, it assists in bringing the story to life while also helping to preserve the stories in a number of ways. The hard work and organization is archived for future researchers and accessible to a large audience. In our case, we went through a database of approximately 1,200 photographs and any documents found during our research. These photographs and documents were a form of technological record keeping and the use of modern technology provides the opportunity to enhance them. This is an opportunity for the photographs and documents to come to life and showcase their stories and history in a new way. The 3D model walkthrough clips and the website are posted online for anyone to explore. This specific use of a website demonstrates how technology can increase the accessibility of a narrative. It is important to combine history and technology to preserve stories and, in our case, the history of the Lost Villages, now that we live in a technologically driven society.

It was intriguing to contemplate the reasons why this story might have lost relevance in history.

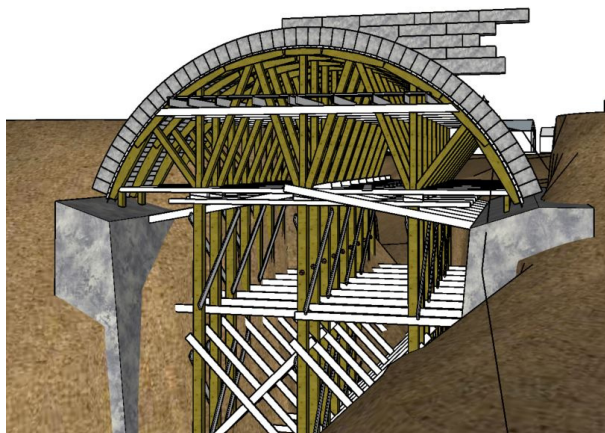


Figure 24: West Boylston Arch Under Construction Model



Figure 23: Article Detailing the Construction

Is there something deeper behind the Lost Villages about which we do not know? Was the flooding for the dam more politically motivated than we think? Was the loss of recorded history simply due to archival disorganization? If so, in a more generalized sense, why and how do historical stories become hidden or lost? The story behind the Lost Villages was not necessarily lost, but rather scattered throughout various resources. The historians studying this material before us had already interpreted the subject matter their way and provided a basis for our group to work off of. Our goal was to enhance this archival material through methods prior historians and storytellers did not have access to. They had physical photographs of all the buildings, we were able to enhance the graphics and make them three dimensional.

Technology, Storytelling, & The Lost Villages:

They had recorded general facts about the time period and a few specific individuals, we were able to further interpret these facts using other knowledge of the time period. A major purpose of storytelling is the continuation of noteworthy moments and time periods. We wanted to maintain this aspect while also introducing a perspective that could only be achieved through modern advancements. The task of uncovering the story of the Lost Villages encompassed many aspects, the most important ones of which were explained above. Our project embodied the discussed topics, these being Digital Humanities, Digital History, historical significance, storytelling and technology, and the Wachusett Reservoir. To effectively complete this, the following protocol was implemented and followed.



Figure 25: Seraphine Prince's Boardinghouse ¹⁴



Figure 26: Seraphine Prince's Boardinghouse Model

Methodology

Introduction

The construction of the Wachusett Dam in 1905 led to the disappearance of the Lost Villages of West Boylston. This flooding and further disappearance left many questions, both technical and ethical, unanswered. These questions include: What is the significance of the village of West Boylston in history the of the region and in relation to the Wachusett Dam? Why is it important to preserve that history and create this archive for the town? How can technology aid in the preservation and rediscovery of lost stories and history? We aim to answer some of these questions through our historical and social science research. This will be a qualitative study focusing on the historical background associated with the Lost Villages. The reasoning for this is the fact that the main priority of our research is to gather and compile information about this historical mystery.

We planned to utilize multiple methods to help us answer these important questions mentioned in the above paragraph.



Figure 27: Construction of Wachusett Reservoir¹⁴

Our team's research contained three main components: background research on relevant landmarks and stakeholders, historical inquiry, and 3D modeling . In addition, we promised our sponsor deliverables including artifacts (e.g. videos, models, and story) that would add to his historical website on the Lost Villages, as well as a presentation to the local Beaman Library for the town of West Boylston to learn about this work and their history .

The sections below will go into more detail on our research design, background research, historical inquiry, technical aspects, challenges and opportunities for our work, and the deliverables of our work.

Research Design

The focus of this project as mentioned was to uncover the unknown tales of the Lost Villages of West Boylston. In order to successfully accomplish this, several steps and types of methodology were implemented. A rough process outline that we followed was identifying our objectives , gathering sufficient background information, creating an interactive re - creation , and gathering feedback. A small inspiration for our methodology came from an IQP project from 2006, "Creating a Virtual Tour Design Guide for Museums".¹³ Similar to this, our project was focused on understanding the history of the villages through background research and literature review, historical inquiry, and finally creating a 3D model that serves as a reconstruction of the village . The result was an interactive, first-person tour of the Lost Villages through the eyes of a fictional, historically accurate traveler, stepping through the reconstruction of the villages and listening to the stories of its inhabitants.

Implementing this methodology meant a lot of learning and skills acquisition for the team. We learned how to operate SketchUp to create our 3D model. We ensured that the aspects of the model (buildings, bridges, roads, etc...) were to scale to the best of our ability. Our model is historically and geographically accurate and has the potential to simulate the events of the flooding. The deliverable of this model is a guided virtual tour of the Lost Villages, where tourists can examine selective parts of the model. These models and stories then were used as important content to add to the interactive website that provides information as well as our model of the Lost Villages.

We also conducted historical inquiry and learned about digital humanities – the use of digital tools to archive and engaged with historical and cultural information – as well as the skills to conduct digital storytelling such as script writing and basic video editing. We also researched and investigated the history of the Lost Villages of West Boylston to obtain a concrete understanding of what they once were. To supplement this, we conducted interviews and surveyed residents/former residents of West Boylston with the purpose of collecting and documenting their knowledge of the Lost Villages. Our team’s final goal was to determine the impact of the flooding of the Lost Villages. We answered the questions of what happened to the residents and whether they were compensated or forced to leave regardless of their wishes.

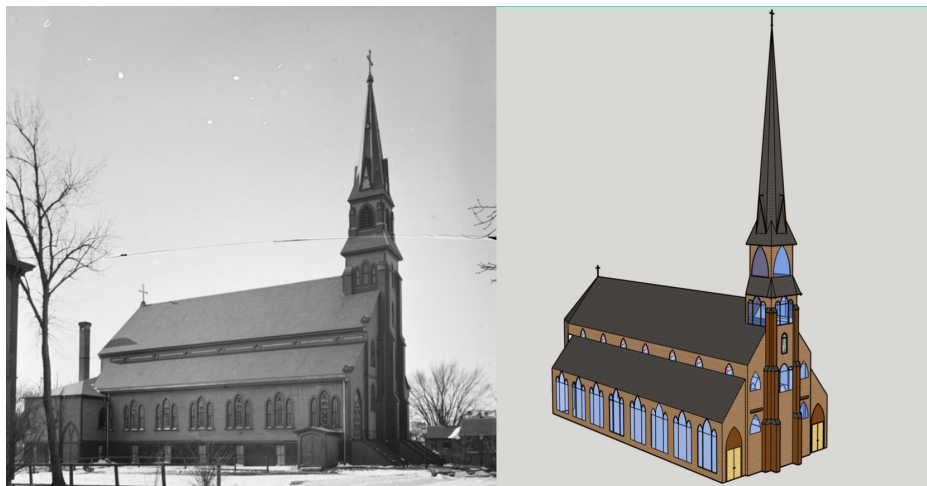


Figure 28: Catholic Church Source Image and Model

Background Research



Literature Review

Our first project goal was to complete thorough background research on the relevant landmarks and organizations relating to our project. In order to accomplish this, our group identified organizations with the potential to further our research and direct us towards our end goal. These organizations consisted of the Wachusett Dam and Reservoir, the West Boylston Library and Historical Society, Clinton Historical Society, and the Massachusetts Water Resource Authority (MWRA). With these sources identified, we began to conduct our research with the goal of uncovering as much information about the villages lost beneath the reservoir.

We decided to focus our investigation on the material aspects of the town. The Lost Villages were strongly developed economically and growing so we knew there was a plethora of material out there on the subject matter. Everyone had possessions, a home, and many residents made their living by running businesses in the old West Boylston. By investigating these aspects, we would take a deeper dive into the culture of these people. Our research would touch on what they did for a living, what services they provided to the people of their community, and in turn figure out what commodities and necessities the residents used in their everyday lives. The decision to focus on these aspects brought us a step closer to telling their stories and understanding the full history of the Lost Villages.

Since each resident had an individual story to tell, our next step to understanding the history of the Lost Villages was to gather as much information as we could about the people that lived there and the businesses they ran. However, these people have obviously all passed, so we were unable to learn their stories directly from them. We believed their descendants would be very significant to our project and concluded they would most likely have knowledge that is very important. Our hopes were that they would possess information that could not be found in a museum, library, historical society, or any place dedicated to historical preservation. Even though this information would solely be stories that were once told by their grandparents, it was the closest we had to the people of old West Boylston.



Figure 29: West Boylston Historical Society

Background Research



Literature Review

In the first phase of our background research, we conducted a general study in order to understand the history of West Boylston and identify the relevant landmarks and stakeholders. This consisted of visiting the official websites of the organizations listed above and gathering information on their mission statements and potential relation to the Lost Villages. During this process, we were able to narrow down which of our initial organizations would remain impactful to our research. For example, the MWRA supplied great history on the development of water networks throughout Massachusetts, but it was clear their focus was not historical preservation. They did not serve an immediate role in our historical inquiry but were still supplemental in our general study. Now that we had reduced our source pool, it was time to gather more specific information on the Lost Villages.



Figure 31: Data Organization at Beaman Library

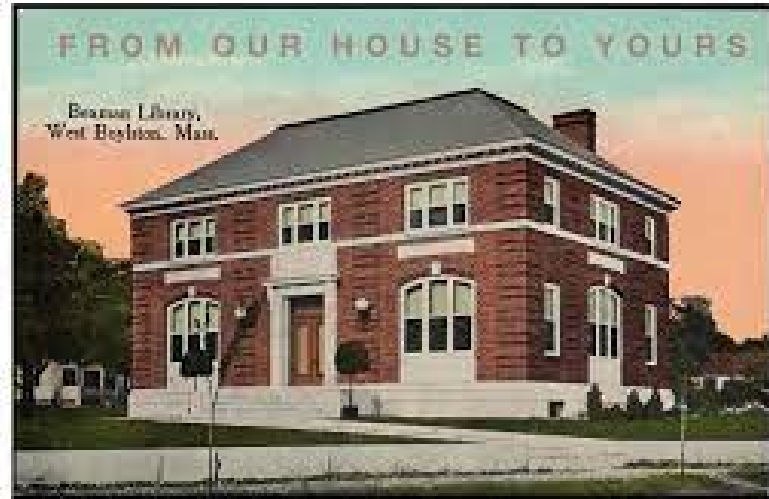


Figure 30: Beaman Memorial Library

During the second phase of gathering information on the Lost Villages, our group was looking for more detailed information on its residents, the property, and the impact of the reservoir. As mentioned above, we contacted several organizations that we believed could advise us on how to go about historically accurate research for such a distinct topic. Anna Shaw, an employee of the West Boylston Library, provided us with access to the library's collection on the Lost Villages. This collection included a photo database and literature on the brief history of the villages. This document analysis provided us with part of the information that helped us create a comprehensive story of the dynamic of the village. Similarly, Professor Marrone was also a tremendous help in completing our background research. He was an expert on the subject matter and provided us sufficient background knowledge to base our research around.

Background Research

&

Literature Review

cont.



Figure 32: Terrance Ingano

Similarly, the Clinton and West Boylston Historical Societies were key sources for acquiring more specific information. These Historical Societies focus on preserving the history of their respective towns and residents through archives. Terrance “Terry” Ingano, a well-known historian at the Clinton Historical Society, was our primary guide in navigating and gathering the information that provided us with access to the extensive archives. These archives had specific stories unique to individual residents of the Lost Villages which helped us to tell a more personalized story. Additionally, the Historical Societies have records of genealogy, historic buildings, and the reservoir construction process which narrowed down our search for characters that had the potential to add to our story. From these records, we attempted to reach out to descendants of the residents of the Lost Villages to provide them an opportunity to share their family’s story through our project.

Historical Inquiry

The main question we were trying to answer for this project is how the digital humanities can be utilized in order to successfully preserve history accurately. In order to preserve the tale of the Lost Villages, there were several aspects of the history we had to cover. We needed to find out about the demographics of the village: culture, religion, occupations, population, wealth classes, etc. A compiled list of our interview questions can be found in our supplemental materials. All this information was necessary for us to build a narrative about the Lost Villages and educate the public about these parts of their town. We really wanted to focus on telling a personalized story, not just reciting facts. This required us understanding the time period through a variation of primary and secondary sources. The major focuses of our historical inquiry pertained to building modelling and storyline development.

In order to model the buildings, we needed to know what they looked like at the time of demolition. The photos were found using the Digital Commonwealth, an online database consisting of photographs, manuscripts, audio recordings, and other materials of historical interest for the state of Massachusetts. Our navigation of the website consisted of the Massachusetts Archives, specifically the Massachusetts Metropolitan Water Works Photograph Collection. This specific collection consisted of over 1200 photos of houses, churches, mills, stores, and more from the Lost Villages prior to demolition. Our sponsor had provided us with an annotated map (see supplemental material) that was split into four sheets. Each sheet detailed the roads and building locations of the Lost Villages. Our team had gone through this map, following the roads that would comprise our virtual tour route districts. These districts included Prospect Street, Holbrook Street, Upper Village, and Lower Village.

Each building location was marked with a specific number which correlated with a photo on the Digital Commonwealth archives. We recorded the building numbers on our route in an excel spreadsheet titled "Building Organizer" (see supplemental material). We then sifted through the 1200 photos to find the buildings on our route, approximately 105 buildings. Finally, the links to each photo were pasted with its correlating building number in the spreadsheet. Additionally, our spreadsheet accounted for construction status, author, historical property owner, street location, and map sheet.

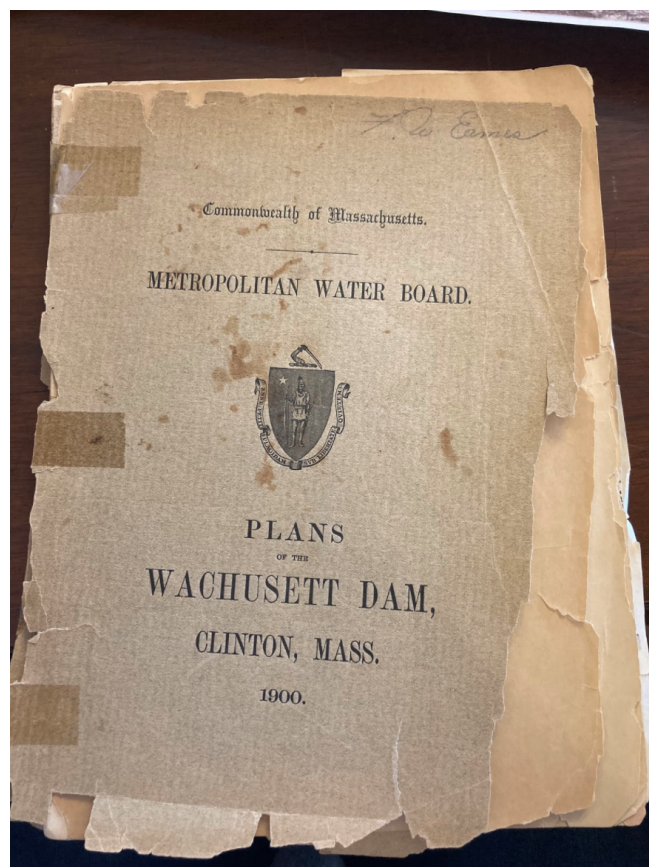


Figure 33: Wachusett Dam Plans

Historical Inquiry

cont.

To gather details and to fill in the story for the town we were remodeling in SketchUp, we needed to respectively make trips to the Beaman Memorial Library as well as the Clinton Historical Society. Travelling individually was necessary due to COVID restrictions.

The trip to the Beaman Library and a look through their digital archives provided our group with many photographs, most of which we could find on the Digital Commonwealth. However, what we got from the library that could not be found on the online database were individual building annotations; one for nearly every building we worked on. These were very helpful because it filled in parts of a story that we previously did not have. For example, the picture of the Rice / Holbrook mansion stated :

“House originally built by Mr. Holbrook who was the owner of the Holbrook Mills near the Old Stone Church. Mr. Holbrook’s daughter married Frank H. Rice who later became the owner of the mills and this house. The triangular shadow between the house and barn is the roof of an octagonal summer house which was moved to 43 Scarlett St where it stands today. The barn was removed to 46 Central St where it remains today”.

These details may have seemed minor, but the research that we did at the library helped us gather facts that were the foundation of our story. There was much more information at the library than we expected there to be, and the librarian, Anna Shaw was a critical resource by assisting us in any questions we had about the information.

In order to find other community resources like Anna, we asked Anna and others, through an informal snowball sampling, to suggest points of contact and expertise. When asking West Boylston residents who would be a good person to talk to regarding what life was like before the reservoir, several said Terry Ingano, the guide at the Clinton Historical Society.

With this recommendation, we contacted the Clinton Historical Society to begin our research through Terry. Clinton was where Terry was based and regarded as the town historian. Upon arrival, Terry acted as a guide around the Historical Society, showing where potential helpful resources were, such as photos and documents from the reservoir/dam construction, and books about the history of West Boylston and surrounding towns before the dam. Terry was a wonderful resource in that he was not overwhelming, he simply provided us with information to poke through and was available for questions while we were doing so. The Clinton Historical Society was our source of archives and primary sources, which provided us with not only basic information of the town but also a few names of people who headed the reservoir construction and related events.

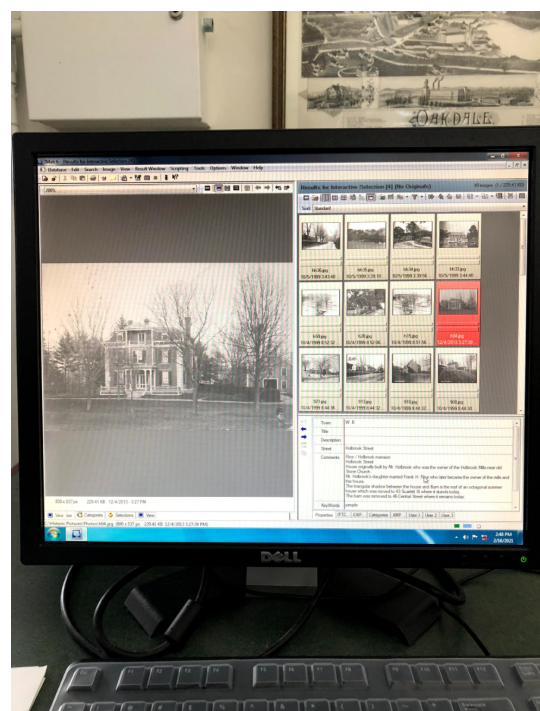


Figure 34: Computer at the Beaman Library

3D Modeling:

When we retrieved a satisfactory amount of background information, our next step of our project was the 3D modelling. The 3D models were an important focus and work-intensive aspect of our project. Our modelling work would be featured on a final website designed by Professor Marrone and available widely to the public. The design process was done through SketchUp and consisted of several steps in order to accurately and realistically depict the architecture. SketchUp is a 3-D modelling program that has many different functions and drawing tools that were incredibly useful in modelling the buildings accurately. A baseline of building designs had been started by Professor Marrone, so we focused our work on elaborating on the small details in the architecture of the buildings and expanding the storylines of the buildings we discovered during our research. We repeatedly made judgements, based on our findings, on how to detail the buildings and environment so that it was historically accurate. A rough modeling process outline was as follows:

1. Identify the building of interest on the spreadsheet and access the photo link for reference.
2. Build a simple, geometric outline accurately representing the building.
3. Outline doors, windows, paths, decks, stairs, through simple SketchUp geometry tools.
4. Build the individual components from step 3 individually in great detail in a separate plane within the SketchUp blueprint.
5. Make a copy of the component and place it in its respective location on the model from step 2.
6. Add texture and color to match the photo.
7. Final creative liberties for features not addressed in the photo.



Figure 35: SketchUp Logo

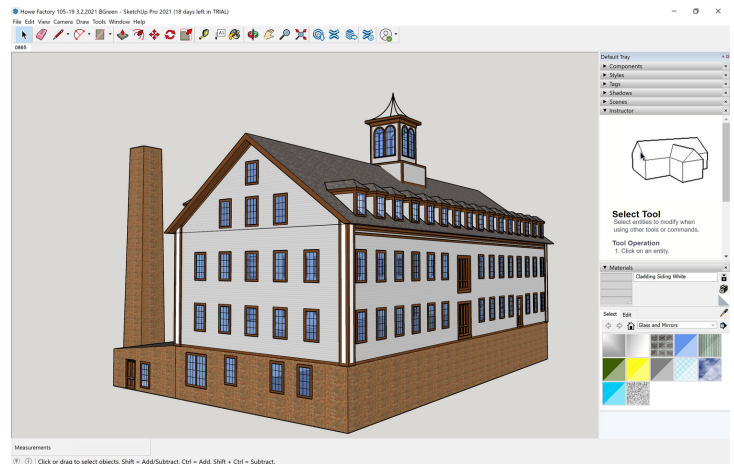


Figure 36: Howe Shoe Factory Model



Figure 37: Snow Market Model

Video Production

Our hopes of utilizing the digital humanities to tell our story was to increase the overall reception and understanding of our subject matter. We decided the easiest way of displaying our findings were through a narrated video, displaying each building model and its accompanying history. With the individual building models completed and inserted into the final model and a walkthrough video recorded, the storylines were written, practiced, and recorded. The final stage of the process was to combine all our content into a voiced over video.

For this process, the popular video editing software "Adobe Premiere Pro" was utilized. Adobe Premiere Pro is a timeline-based software developed by Adobe Systems and published in its "Creative Cloud" licensing program, with the likes of Adobe Photoshop and Adobe Dreamweaver. The MP4 video files of each individual district were implanted into the software, followed by the audio files of our story. The video files were then cut up and stretched to accommodate the determined time that they were talked about in the story. It was determined to edit the individual videos in this manner, rather than tell the story as the video was recorded, in order to improve quality and conciseness of each video. When the videos were completed, they were rendered and exported as AVI files, and implemented into the website.

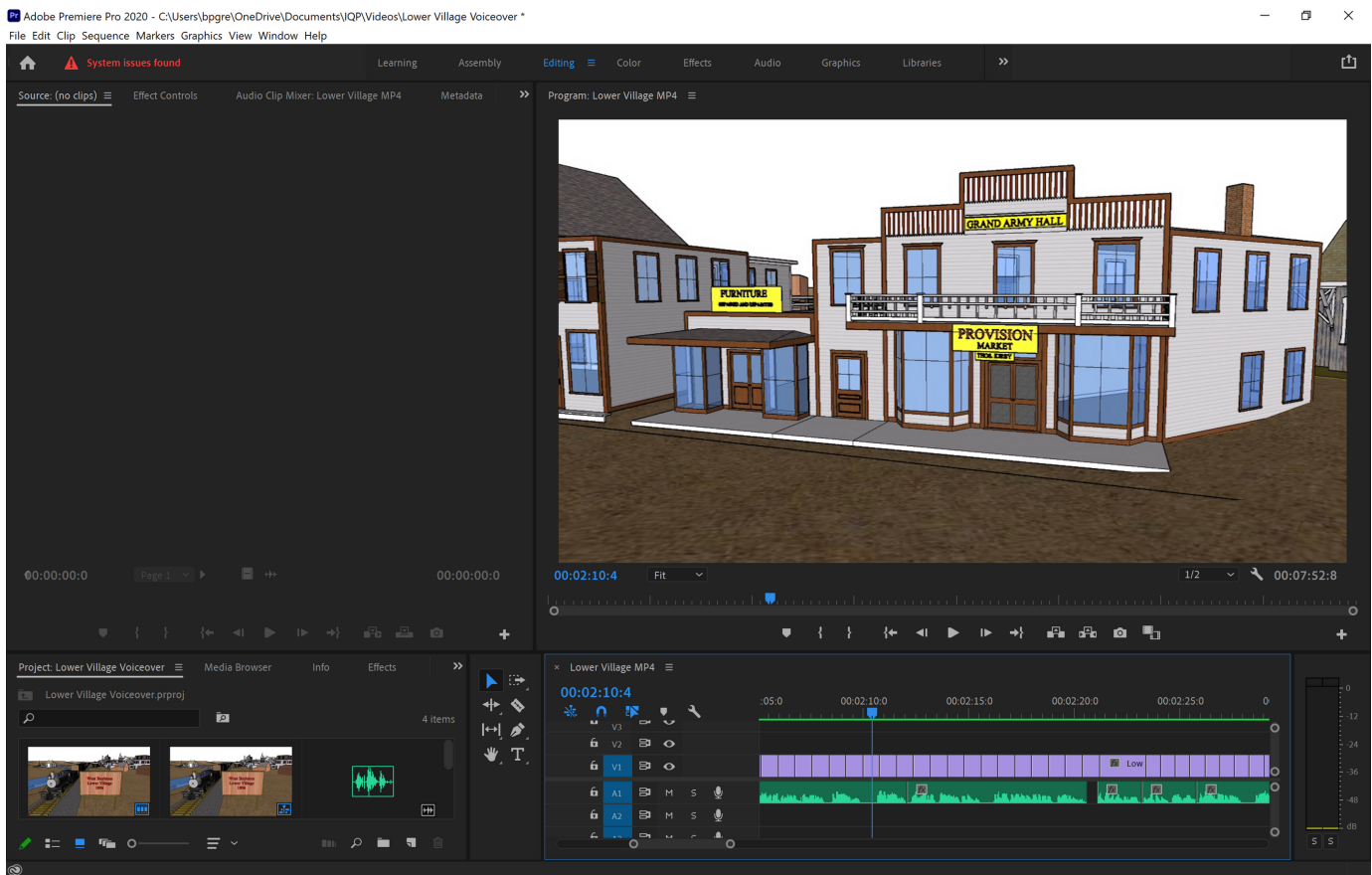


Figure 38: View While Editing in Adobe Premiere Pro

Data Collection & Management

Managing our sources was unique since it was mainly archival research and interviews. In order to do that, we kept detailed notes about who and when we interviewed or went through a specific archive. Zotero, an online citation manager software, was used to keep track of documents and webpages we found online. All our research, active work, documents, presentations, and project related material was uploaded to a Google Drive page. This Drive consisted of several folders, each dedicated to specific areas of our project such as completed building files, historical research, and meeting notes. The Drive was the most critical part of our data management and served as the sole location of all project material. A sample of our Drive can be viewed in supplemental material.



Figure 39: Google Drive Logo:

As mentioned, our primary sources for data collection were the Clinton Historical Society, West Boylston Historical Society, Massachusetts Digital Commonwealth, and Professor Marrone. Due to COVID restrictions, our interviews were primarily over Zoom, so we had recorded our Zoom sessions in order to capture potentially missed material. Professor Marrone was our central subject matter expert and was the only participant whose virtual meetings were recorded. This allowed us to sort through specific aspects of the interviews and pick out quotations or missed details to integrate into the website. Furthermore, while visiting the local historical societies, we took both notes and pictures of helpful documents and information. The information was compiled in our Google Drive document "Background Research" in order to have it located in one cumulative, secure location.

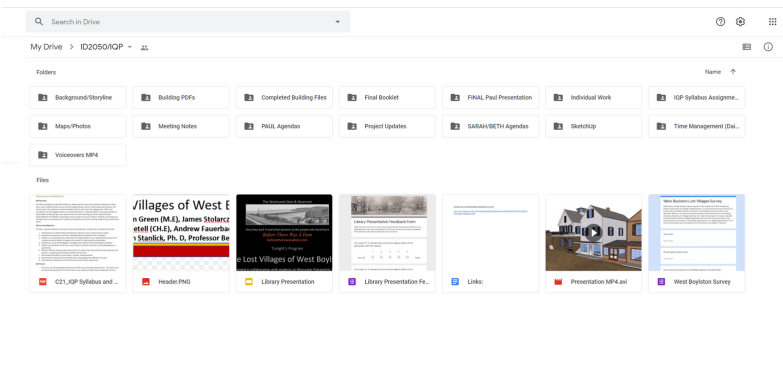


Figure 40: Snapshot of our Google Drive:

Data Collection & Management - Survey

We put out a simple survey on the West Boylston Town Facebook page that asked residents if they had any information or links to the Lost Villages. The survey, in early December, we posted a Google form to the West Boylston Neighbors Connect Facebook group. The survey was concise, and asked only of the respondent's name, email address, the information they knew, if they were willing to share this information with us, and if we could include it in our project if we gave them credit. We received a few responses and comments that we primarily used as leads to jump start our background research. These included general advice that we were already aware of for the most part, such as visiting the Beaman Library and local historical societies. Our hopes were that these sources would fill in the missing pieces of history among the recorded data for the Lost Villages. We reached out to the three respondents of the survey multiple times via both email and Facebook messaging, and unfortunately, we received no responses. Due to this, the survey was posted on the WBNC Facebook group once again in early February, in order to hopefully garner a few more responses and last-minute resources for our research. We received no such responses. The only helpful lead we gathered from the short responses we did receive were to talk to Terry Ingano at the Clinton Historical Society, who we touched on in prior paragraphs.

West Boylston Lost Villages Survey

Hello citizens of West Boylston! We are a group of four students from WPI completing a project involving the Lost Villages of West Boylston. For those who don't know what this is, it is essentially what West Boylston was before it was flooded by the construction of the Wachusett Reservoir. The only thing remaining today is the Old Stone Church, overlooking the water where the Lost Villages used to be. Our task for this project is to create a detailed virtual 3D model of what the Villages looked like, and to do this, we need your help. If you have any photos, documents, or knowledge regarding the Lost Villages please feel free to fill out the survey below, even the smallest bit of information is very helpful! Thank you!

Your name

Your answer

Phone number and/or email

Your answer

Do you have any relatives or knowledge related to the Wachusett Reservoir/Dam construction?

Your answer

Would you be interested in being interviewed? (COVID safe, over Zoom)

Yes

No

Are you willing to share this information with us?

Yes

No

Can we include this information in our project? We will give you credit.

Yes

No

Figure 41: West Boylston Facebook Page Survey

Data Collection & Management - Survey

The largest data collection and management portion of this project was the building organization. There were 105 buildings on our route which was far too many buildings to complete in our seven week time frame. Professor Marrone expressed to us that he would like us each to deliver a 15 min presentation on our respective districts as a final presentation and contribution to his website. In order to reduce our collection, Marrone walked us through our virtual map route and discussed buildings he thought would make valuable contributions to the final storyline. Once we each had our buildings, we needed to begin gathering information on our buildings of interest. Information we were looking for was mainly on the owner (profession, historical significance, ancestry) and the building's purpose in the community. As reference above, these 105 buildings were managed through an excel spreadsheet that organized them by map sheet number, district, street name, owner, and a hyperlink to respective archival photographs. Additionally, the spreadsheet recorded status by number (0 – 3: Incomplete – Complete) and author. This building organizer was critical to team communication as we were able to see one another's instantaneous status.

Lastly, at the conclusion of our presentation to the Beaman Library, we linked a simple, five question survey for feedback on the show. This survey is talked about in detail in section x of our conclusion.

A1	A	B	C	D	E	F
57	104	282	1	Mallett	Clement	https://www.digitalcommonwealth.org/search/commonwealth/vt15030b
58	104	373/374/375	0	Pierce	N Main	https://www.digitalcommonwealth.org/search/commonwealth/5h73qz12x(373) & https://www.digitalcommonwealth.org/search/commonwealth/5h73qz12x(374) & https://www.digitalcommonwealth.org/search/commonwealth/5h73qz12x(375)
59	104	376/377	2	Hildreth	N Main	https://www.digitalcommonwealth.org/search/commonwealth/5h73qz18h(376) & https://www.digitalcommonwealth.org/search/commonwealth/5h73qz18h(377)
60	104	778/779/780	2	Cowee Mill	Holbrook	https://www.digitalcommonwealth.org/search/commonwealth/6q182d03z(778) & https://www.digitalcommonwealth.org/search/commonwealth/6q182d03z(779) & https://www.digitalcommonwealth.org/search/commonwealth/6q182d03z(780)
61	104	782/783	2	Rice Mill	Holbrook	https://www.digitalcommonwealth.org/search/commonwealth/6q182p11t(782) & https://www.digitalcommonwealth.org/search/commonwealth/6q182p11t(783)
62	104	905	1	F Rice	Holbrook	https://www.digitalcommonwealth.org/search/commonwealth/bz60d78z
63	104	906	1	F Rice	Holbrook	https://www.digitalcommonwealth.org/search/commonwealth/bz60d784f
64	104	907	1	F Rice	Holbrook	https://docs.google.com/spreadsheets/d/1HOVYDFmQxo6YnOAJVnUJUIZCnDjOBzptzktwJ0nkcq/edit#gid=0
65	104	908/909/911	1	F Rice	Holbrook	https://www.digitalcommonwealth.org/search/commonwealth/bz60d788f(908) & https://www.digitalcommonwealth.org/search/commonwealth/bz60d788f(911)
66	104	912	1	F Rice	Holbrook	https://www.digitalcommonwealth.org/search/commonwealth/3197ze83d
67	104	921	2			MISSING
68	104	922	2			MISSING
69	104	923/924/925	0	Reed	N Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d814z(923) & https://www.digitalcommonwealth.org/search/commonwealth/bz60d814z(924) & https://www.digitalcommonwealth.org/search/commonwealth/bz60d814z(925)
70	105	157/159	2	Prince	E Main	https://www.digitalcommonwealth.org/search/commonwealth/m301161q(157) & https://www.digitalcommonwealth.org/search/commonwealth/m301161q(159)
71	105	163/164	0	Homer	Fletcher	https://www.digitalcommonwealth.org/search/commonwealth/m301171q(163) & https://www.digitalcommonwealth.org/search/commonwealth/m301171q(164)
72	296	165/166	2	Gordon	E Main	https://www.digitalcommonwealth.org/search/commonwealth/m301175f(165) & https://www.digitalcommonwealth.org/search/commonwealth/m301175f(166)
73	105	167	2	Laine	E Main	https://www.digitalcommonwealth.org/search/commonwealth/c82k412
74	105	295/296	2	Goselin	E Main	https://www.digitalcommonwealth.org/search/commonwealth/vt150j52c(295) & https://www.digitalcommonwealth.org/search/commonwealth/vt150j52c(296)
75	105	368	2			MISSING
76	105	370/371	1	Montville	E Main	https://www.digitalcommonwealth.org/search/commonwealth/5h73qz06q(370) & https://www.digitalcommonwealth.org/search/commonwealth/5h73qz06q(371)
77	105	817	2	McQuilian	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d624s
78	105	833	0	Jefferson	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d646f
79	105	835	2	Flagg/Grenier	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d650q
80	105	837	2	Blanchard	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d654h
81	105	839	2	Snow Mkt	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d658m
82	105	845/846	2	Fish Mkt	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d670w(845) & https://www.digitalcommonwealth.org/search/commonwealth/bz60d670w(846)
83	105	858/859/860	2	Flagg	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d658e(858) & https://www.digitalcommonwealth.org/search/commonwealth/bz60d658e(859) & https://www.digitalcommonwealth.org/search/commonwealth/bz60d658e(860)
84	105	861	1	Walker	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d702z
85	105	863	1	Daly	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d705z
86	105	867	0	Howe	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d714r
87	105	868	2	Howe	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d716z
88	105	870	2	Winter	E Main	https://www.digitalcommonwealth.org/search/commonwealth/bz60d720z

Figure 42: View of our "Building Organizer"

Potential Obstacles

Especially being amidst a global pandemic, there were several roadblocks that arose between us and our goals. The most obvious one is COVID-19, which is not only an obstacle, but has trickled down into multiple areas of our project and created different problems.

The most frequent difficulty resulting from COVID-19 was communication. Communicating with our fellow group members, sponsors, advisors, and resources was a much harder task than years past, since nearly everything we had to do was online. There had been issues with connection on Zoom and an overall barrier in virtual communication. Aside from our meetings over zoom, the only way to stay in touch with Professor Marrone was through email which meant we would often have to wait some amount of time to get feedback.

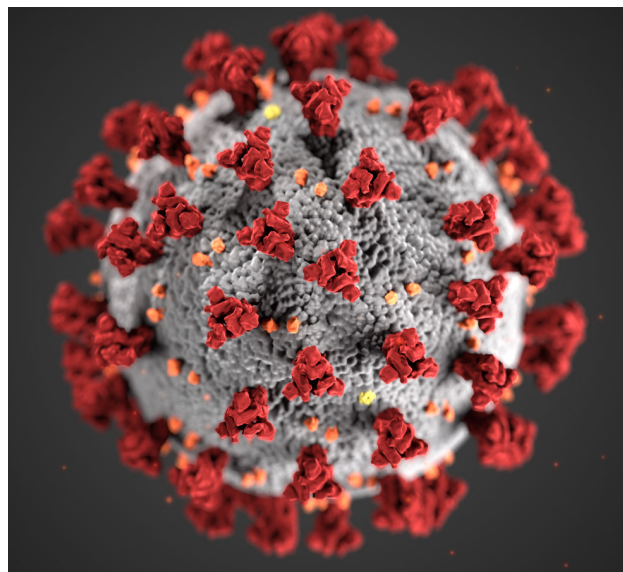


Figure 43: Coronavirus:

COVID also affected our historical inquiry through in-person restrictions. This limited the scope of our research and made working with potential resources difficult since libraries and museums had limited hours. We had to cancel our in-person tour of the project site. A tour would have really benefited our team as we would have been able to better visualize what we were recreating. Our team had to cancel our meeting with Steve Carlson as well. Steve was going to be the guide to our historical research and our hopes were that he would be able to provide us with resources on a scarce topic. Fortunately, these were just obstacles, and it was possible to do a virtual site tour, interviews, and meetings, it simply required more effort.



Figure 44: West Boylston Historical Society

Potential Obstacles

A virtual site tour, although it is better than nothing, meant we see the site but still do not gain that connection and understanding we would have if it were in-person. Professor Marrone suggested that instead of an in-person tour, he take videos of key spots and send it to us, or we go onto Zoom and he shows us that way. Although we made the best of our situation and got as much as possible out of the virtual tour, there were still challenges relating to connection, communication with Professor Marrone, and quality of learning.

A non-COVID related obstacle came from our sponsor. As stated above, Professor Marrone is highly dedicated to this subject and our project was just a fraction of a bigger end goal.



Figure 45: Remnants of a foundation under the Wachusett Reservoir:

He had extremely high expectations and ambitions for our project given the time frame which just could not be met. This contributed to project difficulty since a detailed product had already been preestablished. For example, he had initially wanted an hour of content per group member. This ended up being unrealistic based on the relevance and historical preservation of the subject matter. Due to this, our group along with Professor Marrone had to continually adjust project goals in order to produce a successful deliverable. A major component of this flexibility was team and sponsor communication. All of us met and spoke with Marrone frequently which allowed us to evaluate our status and setbacks with the schedule.



Figure 46: Aerial view of the location of the foundations shown above (Google Earth):

Potential Obstacles

It should be emphasized that there was a major lack of records and sources pertaining to the Lost Villages. Creating a compelling narrative to accompany an accurate three-dimensional model of an entire town that existed over one hundred years ago was no small task and was only possible with the correct historical records. It was necessary to have a collection of pictures, maps, blueprints, and documents so we understood the layout of the town enough to make a detailed recreation of it. Not only did we need enough materials, but they also had to be organized, since a picture of a house is useless unless we knew where it went on the map. Since the Lost Villages of West Boylston was such a niche topic, material was rare, but we were able to find some information by investigating thoroughly and communicating with the people who could lead us to the necessary information. There were already over a thousand pictures on the Massachusetts Digital Commonwealth of the buildings along with maps and blueprints with numbers corresponding to the houses. We didn't find much, and we included all of what we found in our stories. Some buildings had more information than others. The lack of historical information for some buildings in the story wasn't due to a lack of effort, rather extremely minimal information on the buildings and people who owned them. For most of the buildings, nothing was found online, in the Library, or in the Historical Society other than a picture and the name of the building, sometimes the year it was built. There was almost no information on what life was like in West Boylston before the construction of the reservoir. Essentially all of the information we could find about this time period was about the reservoir and dam construction, which makes sense because large projects like that need to be well documented. Due to this, we attempted to contact the man who was very knowledgeable on the topic, Steve Carlson. Unfortunately he denied an interview. This caused many holes in information. We consulted Professor Marrone about this, the second most knowledgeable person on the topic, and he knew as little as we did. From here we knew we needed more information to make the story as realistic as possible. We attempted to get as many resources as we could by pulling from unexpected sources, like the citizens of West Boylston. This is because we believed they could have been holding information that would not have been found in formal places like the Historical Society or Library. This transitions into another obstacle we faced: a lack of community responses.

Our group had tried to utilize West Boylston residents through multiple methods. We had put out a google form survey to try and find potential leads on the subject matter. We had gotten three responses but when we followed up with these residents, they never responded to our emails. We had also posted on the "West Boylston Neighbors" Facebook group but also received minimal activity. This was hard for our team since we were hopeful that we would get a more personalized narrative from people who may have descended from residents of the Lost Villages.

Summary of Project Deliverables

Vision

Professor Marrone has done a wonderful job of making clear what he wanted our final product to look like in March. He not only wanted a model of West Boylston before it was flooded, but he also wanted our group to contribute our findings to a website dedicated to the construction of the Wachusett Dam. Being more specific, Professor Marrone had already built the skeleton of the model on SketchUp and wanted us to add details to the buildings. By details he meant make the building look realistic by adding roofing, windows, colors, signs, doors, etc. He also suggested that we were to add details to anything we please no matter how small or seemingly insignificant, such as roads, squares, horses, greenery, and structures such as gazebos. Since the beginning Professor Marrone emphasized going through the model with a story, and because of this he mentioned that we could add more buildings if we found one that we liked or that we felt could contribute to our story well. Presentation wise, he wanted us to walk the audience through the model with this story and have this model and story available on the website. The story provided insight into the meaning and depth behind each building and location in the Lost Villages. For instance, we focused on certain buildings more than others because it was not only interesting to the audience, but some buildings also shed light on what the town was like at the time.



Figure 47: WPI Logo

Paul Marrone

Engineering

ADJUNCT INSTRUCTOR

EDUCATION:

BS, Civil Engineering, Northeastern University

Figure 48: Paul Morrone

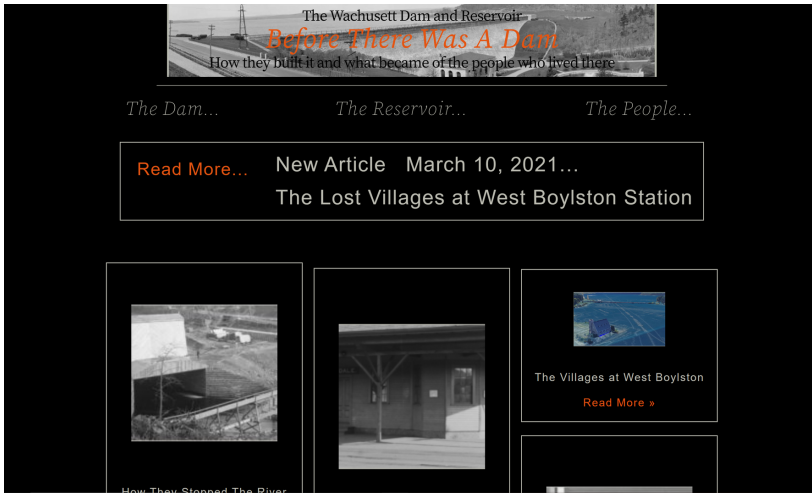


Figure 49: Website Homepage



Figure 50: The Lost Villages Homepage



Figure 51: Lower Village Homepage

Website:

Professor Marrone had previously created a website dedicated to the history of the Wachusett Dam and Reservoir, which included a section focusing on the Lost Villages and our digital re-creation. This re-creation consisted of scale, detailed 3-D models of the buildings that composed the Lost villages. This re-creation was done through the design software "SketchUp". Our portion of the website featured four subsections delegated to each group member and their respective districts: Upper Village, Lower Village, Holbrook Street, and Prospect Street. Each of these districts were historically rich and featured an assortment of relevant historic buildings. Our plan was to record a digital walkthrough touring the districts with a voiceover correlating to the building being pictured on screen. The voiceover followed the plot of a traveler spending a day in the Lost Villages, touring the town, and interacting with the residents. Our hope was to provide an accurate and compelling account of what life was like in the districts. Along with this, our sections featured general facts for a more concise summary of our research. Professor Marrone had expressed to us that we could provide brief biographies about ourselves for viewers of the website to get an idea of the students behind the work, so our respective pages featured those.

Ethical Considerations

While our work is oral history and historical inquiry, not human subjects research, we still have ethical considerations. As we are working with the historical records of real people, we certainly still must do our part to make sure we abide by the guidelines of the IRB during our research. We also had to consider the way to properly portray the stories of real people in ways that were fair, well-researched, and accurate. Working directly with the historians and librarians gave us information that helped make complete narratives of the buildings and people in the Lost Villages.

One area that we do need to be sensitive is in the interviewing of local residents. We will be interviewing residents of West Boylston, obtaining information from our sponsor, and possibly interacting with staff at the West Boylston Historical Society and/or the Beaman library.

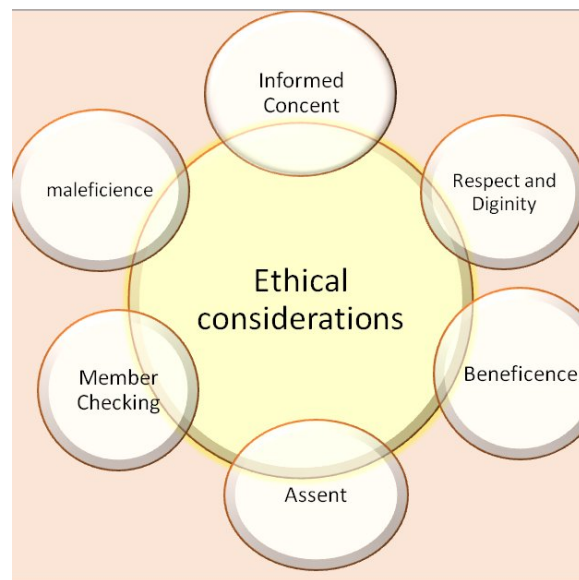


Figure 52: Ethical Considerations

The most sensitive information we gathered were from those residents with ancestors who had their village flooded. However, this was over a hundred years ago, and we expect to receive pieces of information or stories that are not particularly sensitive to the great-grandchildren of this event. If anything, we will be having normal conversations with the residents, assuming they are willing to talk to us. Also, we will not single out a certain vulnerable population, as the residents we interview will likely be chosen at random. Finally, as we do our research in the library and the historical society, we plan on only accessing public information, which should not be sensitive to anyone involved.



Figure 53: Ethics

Results and Conclusions:

The findings and material from sections 4.0, 5.0, and 5.1 were revisited and analyzed in this section. We made recommendations on implementing similar methods of historical and archival research with the intent of guiding future project groups on how to successfully utilize the digital humanities to bolster subject matter and rhetoric. The recommendations are verified in the following sections and incorporate several aspects such as:

- Execution of similar strategies in the preservation of history
- Propositions for subsequent project groups
 - Technical Skills
 - Historical Research
 - Team Organization
- Public presentation, advertising, and general appeal

The results address multiple project outcomes including:

- Presentation to the West Boylston Library
- Website Response

Finally, our collective project reflections are discussed and address multiple team focused aspects:

- Team Growth and Development
- Fluid Expectations and Outcomes
- Opinions on the Final Product

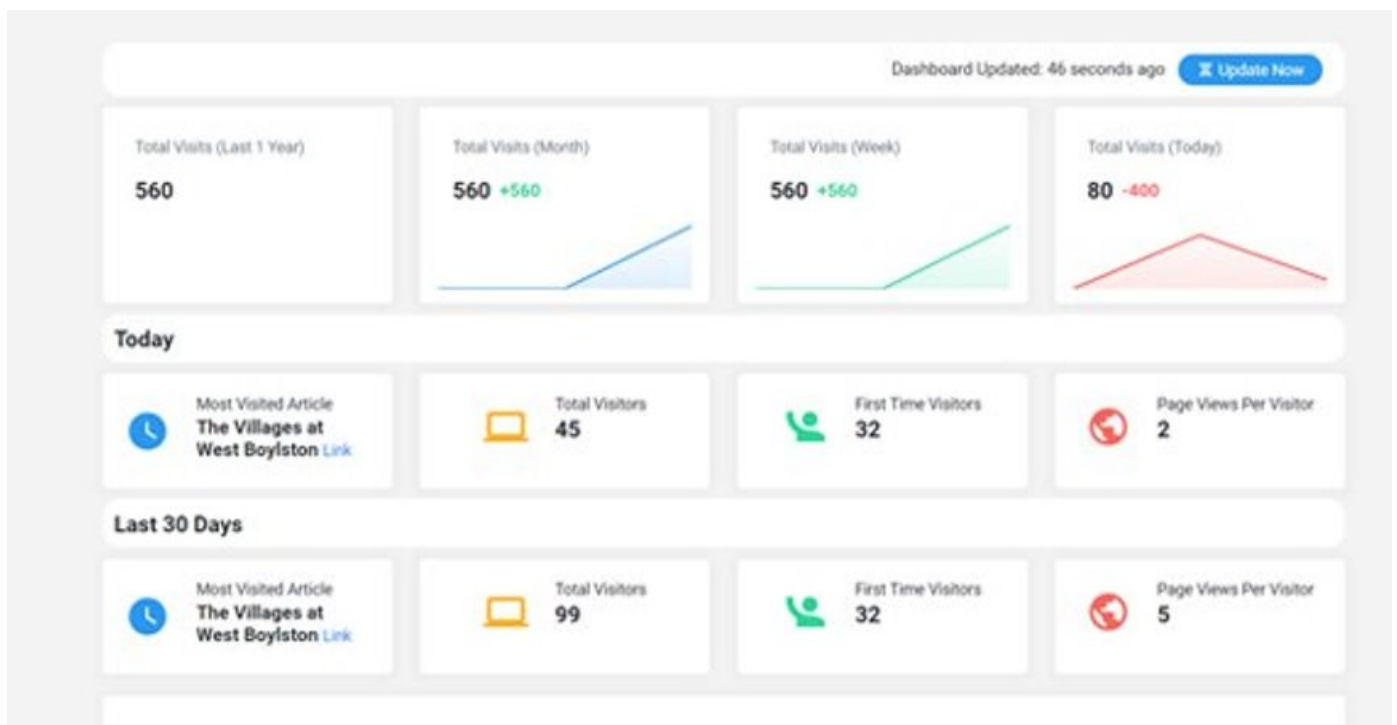


Figure 54: Website Statistics 1 Day Post Presentation

Reccomendations for Execution of Similar Strategies:

This project served as an experimental process in the field of digital humanities. As discussed earlier in our paper, the digital humanities are a broad discipline, whose development is in tandem with technological advancements. Undoubtedly, the digital humanities will only increase in prevalence with time and have the potential to add depth to historical information. In our project, we achieved this through a digital visualization narrated to the viewer by audio voiceover. This allowed for a much more compelling story experience when compared to the traditional archival literature and photos our team had to sort through. Our team would encourage other towns to begin converting their archival history into digital history since it provides a new depth to the experience.



Figure 55: West Boylston Station¹⁴

Our team feels that a rough process outline to follow for execution of similar strategies should primarily be comprised of visual and auditory methods to preserve the history. The use of digital re - creation should be utilized more as it provides the audience with a more thorough idea of what they are learning about. It really tailors to visual and narrative learners as they see the models, hear the story, and take in all of the presented information. The auditory guidance allows for successful delivery of content and can be perfected through recording outtakes and edits. We also recommend the use of a singular location such as a website where all material can be navigated and accessed. This not only increases our ability to get the information across to our audience by providing them the opportunity to revisit potentially missed material, but it also increases accessibility in a way that live presentations cannot.



Figure 56: Frank Rice's Cotton Mill¹⁴

Reccomendations for Subsequent Projects:

Regarding the technical aspects, subsequent projects working on similar project deliverables should certainly begin on the design portions first. It is highly important to begin designing as early as possible since it is often the most time-consuming part of the project. The advantage to starting virtual re-creations early are that it allows the user to get adjusted to the software, so by the time the project term is underway, the latter buildings will not seem too difficult. Also, beginning the project on the buildings instead of the story was beneficial since the story was not necessary to work on SketchUp. However, after doing the buildings and putting the time and effort into them, little details about each person's life are picked up on, and the task of creating a story is much less daunting when there is background information on the characters.



Figure 58: Edward Harper's Central House and Stable

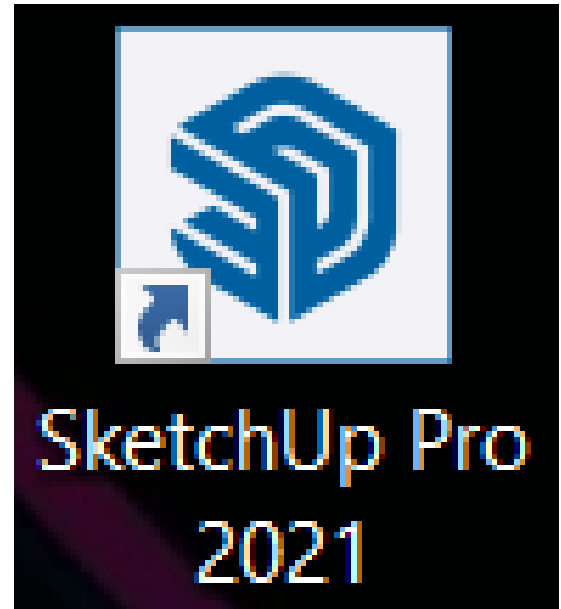


Figure 57: SketchUp Pro 2021

Historical research is the most important aspect of a project dealing in the digital humanities, so it is critical to complete this portion of the project efficiently and successfully. Given the circumstances of a global pandemic, our recommendations would not necessarily hold up under standard conditions. However, if another group is to find themselves in a situation like ours, we recommend utilizing in-person historical research whenever possible. The best organizations to utilize are libraries, historical societies, and museums. We were able to access useful information through books, articles, and even historians that worked in each of these places. However, we were only able to visit the library and the historical society individually, and not as often as we would have liked. There are also online databases that can provide sufficient primary and secondary sources, but a project team is advised to focus on history-focused organizations.

Reccomendations for Subsequent Projects:

A team should also begin this process as early as possible, especially when dealing with a discrete topic such as ours. It takes a lot of time to collect enough historical findings to successfully craft an accurate narrative, so it is only beneficial to have enough buffer room between start and presentation. We also would recommend having the whole team sort through archival data together as it promotes continuity during the story telling process. It also reduces the chance of repetitive findings since the entire team will already be aware of relevant discoveries.

Lastly, a project team will never successfully complete the prior objectives without team organization. The most prominent recommendation we can make is for a project group to meet as a group frequently.



Figure 59: East Main Street Schoolhouse¹⁴

As a team, we met every single morning to discuss objectives and accomplishments. This was extremely useful in strengthening team communication, chemistry, and accountability. We recommend a project group to also use an agenda to track daily tasks, especially if working remote as this allows group members to be aware of their partners statuses. An excerpt of our assignment tracker can be seen in supplemental material. We would also recommend that a team communicate with their sponsor daily and meet with them multiple times per week. Our group would meet with Professor Marrone at the start of every week to discuss our end goals for the following days. We would then have a follow up meeting at the end of every Friday to fill in Professor Marrone with how our plans went. This was especially helpful due to our project's unpredictability and allowed our group to adapt to Professor Marrone's suggestions.



Figure 60: Wachusett Reservoir

Recommendations for Public Presentation, Marketing, and General Appeal:

Doing a term-long project all online can be stressful, and so can having to deliver all our work in an online presentation. As mentioned in the “Results” section, we did a Zoom presentation, and encountered many difficulties during the show. The most troubling aspect of the presentation was when audience members were not muted and began speaking and interfering with the sound from our recordings. To combat this, we should have muted all the audience members and turned their videos off. This way, informalities and distractions would have been kept to a minimum, and the presentation would have gone much more smoothly. Only during question periods and at the end of the presentation should we have allowed the audience members to unmute themselves and speak. Another technical issue during the presentation was not having a waiting room. Professor Marrone agreed with us that we should all join the room 15 minutes early to make sure everything is in order for the show. However, guests began joining very early, in fact as soon as Professor Marrone opened the room. This made things very awkward, and this situation could have been avoided if there was a waiting room set up. This would have enabled Professor Marrone to choose who he let in, instead of letting in anyone. That way, we could have all had time before the meeting to set up the screen share, make sure our camera feeds look professional, etc. Then we could have let the audience in at 6:00 PM sharp and began our show.

In terms of public marketing, our team recommends utilizing local media sources. Local media sources include town Facebook pages, websites, and local newspapers. Keeping the sources small and local increases the probability of your advertisement not being disregarded for other headlines. The local factor is also more personal, so it is more likely to stimulate readers’ interests in their own community. Our group would conclude that if the project can invoke a personal feel, then the appeal to the public will be higher.



Figure 61: Old Stone Church in the Autumn

Results:

The primary deliverable at the conclusion of our project consisted of an interactive web page featuring four virtual tours, supplementary building documents, and testimonials on the project experience. The four virtual tours were pre-recorded by each group member. They were then edited and placed in our final presentation to the Beaman Library. They are currently residing in Professor Marrone's website under the section titled "The Villages at West Boylston". The supplementary building PDF's show a screenshot of each building we re-created in SketchUp next to a picture of what the actual building looked like. We also gave small annotations to each building to let the reader know the function of the building and where it was located.

There were still a lot of aspects that are unknown and will continue to be unknown, especially considering there might have been descendants of residents of the Lost Villages out there who had information to share.. Unfortunately, after extensive survey sharing and reaching out to citizens, we did not find any descendants. This was okay because although it would have been useful to, we still found important pieces of information from the Beaman Library, West Boylston Historical Society, Clinton Historical Society, and Digital Commonwealth which could objectively hold more truth than a passed down story.



Figure 62: The "Central House" Model

Nevertheless, there were still downsides to not finding a descendant. It is possible that a descendant of a resident of the Lost Villages has handed-down possessions that could have told us a story about them, which would have been useful. It is also a possibility that we would learn of an individual who was reluctant to leave and attempted to preserve their community, but was overruled by the authorities and had no choice. We maybe could have learned of a number of individuals who gladly accepted the compensation and made the decision to leave. Despite all of this, we recognized it was important to know that it was not only impossible to uncover every single detail, but that would also cause us unnecessary stress. Keeping this in mind, we did not dwell on the fact that we did not get in contact with a descendant, instead we simply focused on trying as hard as we could and obtaining as much information as was available.



Figure 63: H.O Sawyer & Co. Model

Re-creation, Virtual Walkthrough, & Website:

The four virtual tours consisted of a narrated walk through the recreated Lost Villages. The re-creation featured over 40 buildings, drawn to scale, and accurately detailed. The narration followed the interactions of a traveler from Boston visiting the Lost Villages in the late 1800s. The storylines discussed prominent historical figures including merchants, factory owners, clerks, and more. The virtual tours were posted to the project website, "beforetherewasadam.com", under their respective districts. Along with that, each district also included documents for each building model that compared the virtual re-creation with the actual photo. Under these comparisons was a brief description of the building, its owner, and its location. Finally, the website featured testimonials and reflections from each group member. More information on these features can be found in our supplemental materials.



Figure 64: The "Centennial Saloon" Model



Figure 65: Catherine C. Lourie's Provisions Market/Furniture Store/Grand Army Hall Model

Beaman Memorial Library Presentation:

Our presentation to the Beaman Memorial Library took place on March 10, 2021 at 6:00 PM via Zoom meeting. The presentation consisted of an introduction given by Professor Marrone, narrated videos of the virtual tour routes, a question-and-answer period, an audience feedback survey, and closing remarks by Marrone. In terms of content, the presentation was an overall success and had 60 audience members. Our contact at the library, Anna Shaw, sent the Zoom invitation to everyone subscribed to the Beaman Library in West Boylston, which really improved the show's attendance. A few of the audience members engaged with questions and were excited to learn more about the subject matter. The overall attitude towards the presentation was positive and the residents expressed gratitude towards our work. It is worth noting that Professor Marrone's website received 8 subscriptions following our presentation.

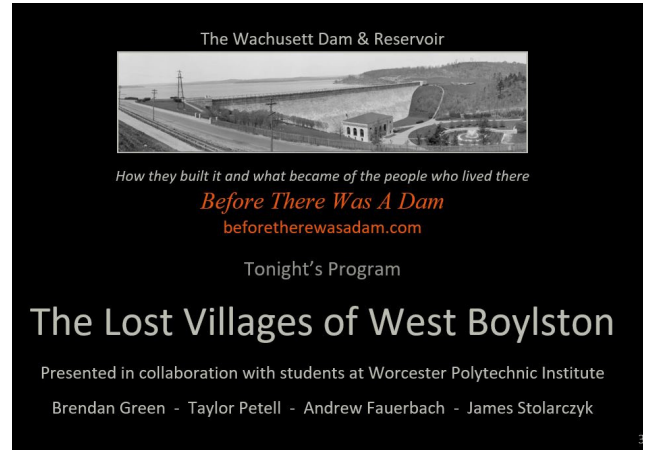


Figure 66: Presentation Title Slide

The final presentation experienced some of the technical difficulties that come with an online presentation as opposed to an in-person presentation. The biggest issue the group had to trouble shoot was guests not muting their microphones. This led to unwarranted speaking and noise at inopportune times of the presentation. Our group were all made co-hosts at the start of the presentation, so we could disable unnecessary sound and get the presentation back on course. Unfortunately, this did take away from the content and quality of the presentation by providing distractions for the other audience members. Additionally, there were issues with the transitions between slides when trying to exit the video. Due to the high traffic on the Zoom channel, the controls would be delayed or even freeze up and required exiting full screen and re-entering it. While this was not a major inconvenience, it did take away from the fluidity and professionalism of our presentation.

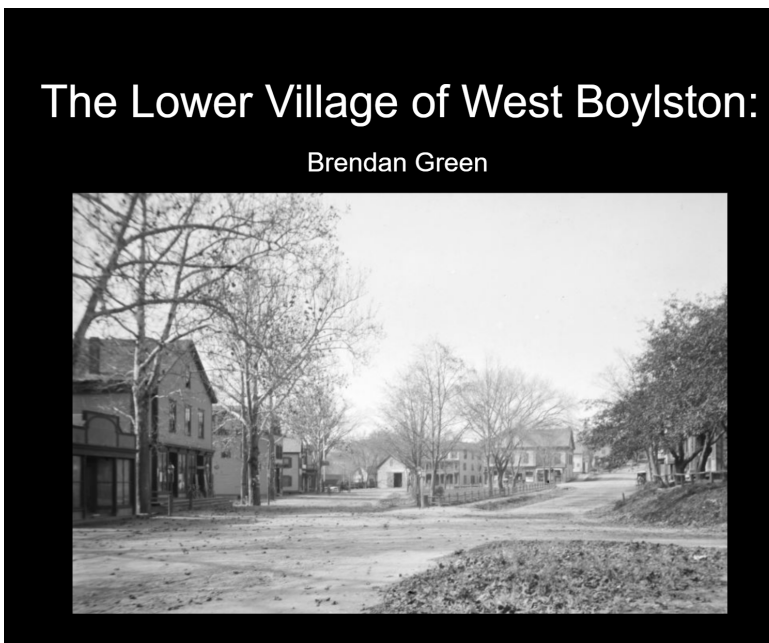


Figure 67: Slide from the Presentation

Post Presentation Survey:

We had an idea to create a survey for our audience to fill out at the conclusion of the presentation. Our hope of implementing a survey was to get direct suggestions on how to improve our project process. The survey can be found in supplemental material and received ten responses. This was approximately 17% of the audience at our final presentation, which is a solid response pool. These responses were used as a gauge of public reception and in developing our project recommendations. We had asked the audience to rate how well they felt they knew the material presented before and after the presentation. Out of all the audience members, 60% of them said that their knowledge was below average prior to the presentation. At the conclusion of the presentation, 70% said their knowledge was above average. This allowed our group to conclude that our methods used to showcase the digital humanities were successful. All responders said that they would recommend the use of the digital humanities for entertainment and educational purposes. Utilization of the digital humanities definitively strengthened our delivery of historical findings, as several responses noted that they enjoyed the digital layout, visuals, historical content, and narratives. The feedback also suggested potential improvements we could make. The primary improvement needed was a present-day map of the area, overlaid on the re - creation. The audience wanted that in order to put the Lost Villages in perspective to modern West Boylston. Other critiques consisted of technical issues such as sound quality, unmuted guests, background noise, etc. Overall, the audience appeared to enjoy our presentation and we succeeded in teaching the subject matter.

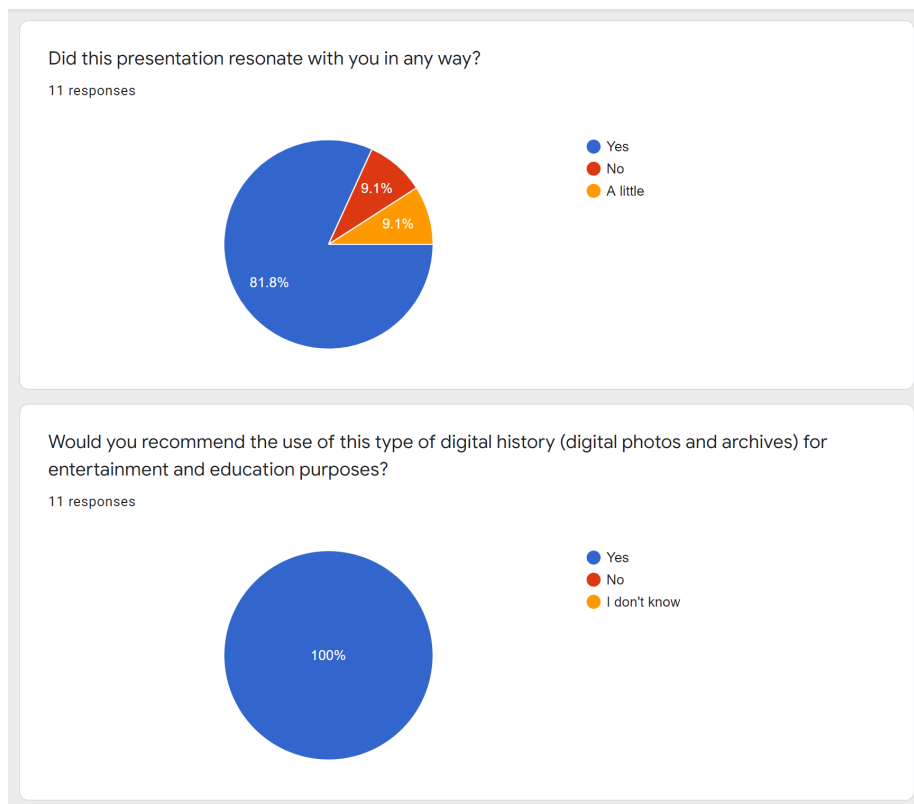


Figure 68: Statistics from teh Post-Presentation Survey

Reflections

We believe the project came out very nicely. Many things had to come together to make our project happen, and to make it turn out well. We faced adversity throughout the seven weeks – learning new technical skills, access to engineering software we did not own, and travel restrictions due to COVID - and we overcame them. Professor Maronne expressed his satisfaction with the final product as well. It was rewarding to work on a compelling, historical project that meant so much to a local community. We thoroughly enjoyed the opportunity to present largely unknown material to an audience and it enhanced the project team's experience.

Our team underwent several periods of professional development as our project progressed. A primary reason our team development went smoothly was that we all got along as a group and worked well together. We all did our work, stayed on top of things, and were always willing to help each other out. Also, everyone had their strengths and weaknesses. We were able to divide and conquer the work based on which team member was best suited for the role.

When we got started with SketchUp, Brendan already had experience with the program, and was able to show us the most efficient way to go about making the buildings. This always kept our heads above water, even if we faced unrealistic expectations from our sponsor towards the beginning of the project. By the end, he realized we all did a great job with the buildings we had, and the time and effort we put into the buildings really showed. When it came time to do writing, James spearheaded the writing assignments, which helped us get them done fast and efficiently. The papers we are writing on the final week of our project probably would not have gotten done at the level they were if it were not for James. He always crafted well-worded paragraphs and was there to suggest edits throughout the paper to constantly further the quality of our writing. Taylor really excelled in communication, and that helped our group a ton because it assured everyone always knew what was going on. When it came time to do research, she had already gathered a lot of information from the historical society and was able to effectively enlighten us with her findings about the villages. We were able to turn this research into a story based around more facts than we had anticipated. While writing the story, Andrew had a sense of creativity that always brought new ideas to our storyline. His adding of detail to the product was unmatched, and really brought the story together nicely. Having this kind of detail in our story, along with our SketchUp buildings, was something we believed helped captivate our audience, and put on a good show for the residents of West Boylston.

A setback of our project was the lack of stability in project deliverables. As previously mentioned, our sponsor's initial vision for the project outcome was unrealistic with the subject matter and time frame. This set us at a disadvantage since we were not entirely sure what our end goal was supposed to be. It was especially stressful closer to our final deadline since we had to effectively adjust to new goals with limited time. Our project outcomes shifted from four hours of total content with 105 buildings completed to become one hour of content with 40+ buildings completed. This was hard on group morale as we felt like we were doing an inadequate job since we were comparing production with initial expectations. This did get better as the project progressed and began coming together. The final product, presentation, and public reception gave us the confidence to say we did the best work we could have done given the circumstances.

Final Remarks:

In summary, this project proved to be an ambitious dive into the vast world of digital humanities. It was characterized by a global pandemic that absolutely changed common project practices. Fortunately, our group along with our sponsors, advisors, and resources were able to improvise, adapt, and overcome the challenges that came with an Interactive Qualifying Project in 2021. Our hopes are that this project will serve as an inspiration and guide for future projects in the field of digital historical preservation. We would like to give a huge thanks to Professor Marrone for all his hard work in producing this project, it could not have happened without him. Additionally, we are grateful for the guidance and feedback that our advisors, Sarah Stanlick and Bethel Eddy, provided us with. For further information on our project process, production, and results, please reference our supplemental material.



The Lost Villages of West Boylston

Andrew Fauerbach, Brendan Green, James Stolarczyk, Taylor Petell



An Interactive Qualifying Project submitted to the faculty of Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science



Figure 69: Presentation Title Slide

References

The following citations are all the sources referenced when completing this project and its accompanying research. The number correlates with the superscripts located in the body paragraphs of the booklet. Additional numbering is for sources that were used in the general completion of this project, but not necessarily used in the writing of this booklet.

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