National Park Service
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Northeast Region
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"An Incorporation of the Adventurers"

A History of the Society for Establishing Useful Manufactures, Paterson "Silk City" and its People, and the Great Falls of the Passaic River

Edith B. Wallace, M.A.

Historic Resource Study

Presented to the Paterson Great Falls National Historical Park

In Partnership with the Organization of American Historians/
National Park Service

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Cover Illustration: Thomas Whitley, oil painting of the Nail Factory, circa 1835. Passaic County Historical Society.

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Recommended by:  May 12, 2020

Shaun Eyring, Chief, Cultural Resources Division, Northeast Region — Date

Recommended by:  May 12, 2020

Darren Boch, Superintendent, Paterson Great Falls National Historical Park — Date

Cover Illustration: Thomas Whitley, **oil painting of the Nail Factory, circa 1835.**
Passaic County Historical Society.

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Acknowledgements

The enormous task of preparing a comprehensive history covering the Society for Establishing Useful Manufactures, the City of Paterson, and the Great Falls of the Passaic River can perhaps never really be complete. The sheer volume of primary and secondary source material available on the numerous associated nationally significant themes ensures that there will always be more to uncover about this fascinating story. This author's humble attempt to distill a large part of that history into seven chapters could not have been accomplished without the help of many players, to whom I am truly grateful.

Thanks in particular are due to Dr. Amanda Casper, Historian, Interior Region 1 (North Atlantic-Appalachian), whose patient and insightful suggestions and comments kept me on track throughout the project. Special thanks are also extended to Dr. Paul Zwirecki, Director of Public History Programs, Organization of American Historians, for giving me this opportunity to work on this important project, and for being flexible and kind under extraordinary circumstances.

I am thankful also to the good folks of the Paterson Great Falls National Historical Park and its partner institutions, especially Superintendent Darren Boch, who shared his time with me despite a busy schedule. A big thank you to Paterson Museum executive director, Giacomo (Jack) DeStefano for giving me a personal tour around the museum and for allowing access to its valuable Society for Establishing Useful Manufactures (S.U.M.) collection, and to archeology specialist Anthony DeCondo for sharing with me his knowledge of the Paterson Museum's archeological collections. Special thanks to Paterson Historic Preservation Commission Executive Director Gianfranco Archimede, who took me on a comprehensive and informative tour of the Park and parts of the larger Great Falls/S.U.M. National Historic Landmark Historic District. Thanks also go to the staff at the Passaic County Historical Society, who shared their extremely useful abstracts from their collection of S.U.M. documents and provided access to digitized documents despite my inability to visit Lambert Castle. Special thanks also to Raymond Whritenour for his help in my understanding of Lenape dialect.

In my quest for images to illustrate this report, I found myself overwhelmed by the number of historic images available. I am thankful to the Paterson Museum, Paterson Historic Preservation Commission, and to the archival staffs at the Passaic County Historical Society, the American Labor Museum, the New Jersey State Archives, and the Wayne State University Reuther Library for graciously fulfilling my requests and providing permissions to publish images from their collections.

Finally, I am truly grateful to those who reviewed the various drafts of this report, including Edward Smyk, Passaic County Historian; Leonard Zax, President, Hamilton

Partnership for Paterson; Professor Glenn Corbett, John Jay College; Amanda Casper, and the two anonymous peer reviewers. Your comments and suggestions were thoughtful and extremely useful. Special thanks to Professor Corbett for sharing his recent discovery of S.U.M. employment records. I look forward to his analysis in his upcoming book!

Preface

In October 2018, the Organization of American Historians (OAH) contracted on behalf of the National Park Service (NPS), Northeast Region, with Edith B. Wallace (the author) to prepare the Historic Resource Study (HRS) for Paterson Great Falls National Historical Park (the Park). The project was on a truncated preparation timeline with completion expected by December 2019.

The project Scope of Work outlined the purpose of this study: "The HRS, as defined in NPS Cultural Resource Management Guidelines (NPS-28), provides a historical overview of a park or region and identifies a park's cultural resources within historic contexts. The study will expand the NPS's earlier analysis of park resources and provide essential information which will inform decisions about the preservation, management, and interpretation of historic and cultural resources at the park."

Research Methods

Given the accelerated timeline to complete this HRS, this report may be termed a "limited investigation." However, a great deal of documentary research from previous studies is readily available in the numerous reports and secondary sources published on the Great Falls of the Passaic and the Society for Establishing Useful Manufactures (S.U.M.). NPS Northeast Region staff provided copies of the relevant cultural resource reports. While this study relied heavily on the research of others, when necessary, the author re-examined documents for clarity.

Two site visits to Paterson were completed as initial steps in the preparation of this report. The first visit served as an introduction to Paterson Great Falls National Historical Park, its resources, and its staff. The visit also included a tour of the Paterson Museum and an introduction to museum Director Giacomo (Jack) DeStefano. The second site visit included a complete tour of the Great Falls/S.U.M. National Historic Landmark district, led by Paterson Historic Preservation Commission Director Gianfranco Archimede. The tour followed the entire raceway system, entry into the Allied Textile Printers (ATP) site, included identification of the various adaptive uses of the occupied mill buildings, and a discussion of significant themes the study should address. The author additionally spent a day at the Paterson Museum reviewing the S.U.M. document collection and touring the archeological collection with Curator Anthony (Tony) DeCondo. While the author was unable to arrange a visit to the Passaic County Historical Society's Lambert Castle museum and archives, library staff provided an abstracted list of S.U.M. documents in their possession as well as several digitized documents by request.

All other primary source research was completed by the author using digitized collections available online, including the Library of Congress (LOC) "Alexander Hamilton Papers," the National Archives and Records Administration (NARA) *Founders Online* "Hamilton Papers," and the myriad of primary source books and pamphlets available online via Google Books, Archives.org, and HathiTrust. See the Bibliography for a summary statement of significant sources.

One final note on the thematic development for this study. Four scholarly essays resulting from the NPS/OAH 2012 Scholars Roundtable were provided for review. The essays were written by academic scholars from various fields: Walter Licht, Walter H. Annenberg Professor of History at the University of Pennsylvania; Grace Palladino, Social Studies and English teacher in The School District of Philadelphia; Ellen Stroud, Associate Professor of History at Bryn Mawr College; and Cathy Stanton, Senior Lecturer in the Department of Anthropology at Tufts University (museums and tourism). Their insights and alternate perspectives provided useful background, which shaped some of the thematic direction of the HRS text.

HRS Text Development with Chapter Descriptions and Major Findings

This HRS addresses the natural and cultural history of the Great Falls of the Passaic and surrounding area encompassing the Park and the greater City of Paterson. Historic context development places this defined area within the larger context of American and world history to aid in interpreting the historic changes and significant moments specific to Paterson and the S.U.M. The theme of the Great Falls' natural beauty and appeal recurs throughout the text of the report as vignettes describing the Great Falls as they appeared to visitors or ways in which the Falls were used as an attraction. The extensive timeline spans the geologic evolution of the Passaic River and Great Falls to the Paterson of today (2019).

The text begins with a brief description of the geology of the region which formed the Great Falls and continues with a description of the Park's resources and significance (Introduction). Chapter 1 covers the prehistoric human use and occupation of the area through its occupation by Lenape bands during the Contact Period, which marks the early intrusion of European explorers, traders, and colonizers. Contextual development places these events within the wider development of European exploration and colonial expansion. Chapter 2 develops the history of early American colonial (specifically New Jersey Dutch and English) industry and trade, the largely economic underpinnings of the American Revolution, and impact of the Revolution on the area around the Great Falls of the Passaic. The debates surrounding the governing of the new United States of America serve as context for Alexander Hamilton and Tench Coxe's vision for American

manufacturing. Chapter 3 covers the establishment of the S.U.M. and the early period of construction of the water-power system, the plan of Paterson, and the early workforce. Chapter 4 delves into the development and innovations of Paterson's industry, the role of the S.U.M., and immigration through the first half of the nineteenth century. Chapter 5 follows the maturing of Paterson's industry as the nation's "Silk City" with some context on the evolution of silk manufactures in the United States. The chapter continues with some brief context on the evolution of the industrial labor movement and details Paterson's larger labor actions and their effect on the city's industry. Chapter 6 looks at the role of Paterson manufacturers during World War I and II, the changing face of Paterson's workforce with the Great Migration, the devastating consequences of the Great Depression and the role of Hinchliffe Stadium, and the demise of the S.U.M. Finally, as Epilogue, chapter 7 discusses the impacts of industrial outward migration, population changes, industrial pollution, and the course of revitalization in Paterson.

As a result of this study, several interpretive themes stand out for their ability to convey the significance of the Park within the context of American history, given below in a numbered format. Theme #4, "The human story of Paterson," stands out for its relevance to the movement to acknowledge and include the full diversity of American history.

1. The timeless beauty of the Great Falls as a natural resource and its fragility in the face of human intervention.

2. Alexander Hamilton and Tench Coxe—large-scale manufacturing as a foundation for the US economy, with discussion of the opposing Jeffersonian agrarian view.

3. Waterpower engineering—the design of the S.U.M. waterpower system and hydroelectric plant and how this relates/related to the mill buildings.

4. The human story of Paterson—Lenape life along the river; Dutch and English farmers who displaced the Lenape and developed the Falls area settlements; the industrial innovators who used the S.U.M. infrastructure to build manufacturing empires; industrial immigration, African Americans, and the remarkable diversity of Paterson. (This should include also the role of women and child laborers, not addressed in-depth in this report; see chapter 7 for recommendations for additional thematic studies).

The history of the Great Falls, the S.U.M., and Paterson is a story of great contrasts—the Lenape's synergistic relationship with the natural world versus the European drive to harness nature for human use and "progress"; Hamilton's industrial economic vision versus Jefferson's agrarian ideal; the division of upper class wealthy owners versus the underclass of industrial laborers. These contrasts play out within the themes highlighted above and provide a tapestry of opposing views for a more inclusive interpretive experience.

List of Abbreviations

Allied Textile Printers (ATP)

American Federation of Laborers (AFL)

American Locomotive Company (ALCO)

Before Common Era (BCE)

Civil Works Administration (CWA)

Common Era (CE)

Dutch West India Company (WIC)

Emergency Relief Administration (ERA)

Environmental Protection Agency (EPA)

General Management Plan (GMP)

Great Falls Development Corporation (GFDC)

Great Falls/S.U.M. Historic District (GFHD)

Historic American Engineering Record (HAER)

Historic Resource Study (HRS)

Industrial Workers of the World (IWW)

Initial public offering (IPO)

Library of Congress (LOC)

National Archives and Records Administration (NARA)

National Park Service (NPS)

Organization of American Historians (OAH)

Passaic County Historical Society (PCHS)

Public Service Electric & Gas (PSE&G)

Public Works Administration (PWA)

Society for Establishing Useful Manufactures (S.U.M.)

Unites States Geological Survey (USGS)

US Securities and Exchange Commission (SEC)

War Department Light Railways (WDLR)

Introduction

Whence rushing, tumbling, foaming from on high, PASSAIC, driven with impetuous sweep, Sprang with a scream of horror down the steep; And in the depths of sternly-girdling rock, Muttered deep groans of anguish at the shock…

Flaccus, 1842[1]

Figure 1: Great Falls of the Passaic (Photo by the author, October 2018)

The dramatic spectacle of the Great Falls of the Passaic River, described above by the poet "Flaccus" (Thomas Ward) is, as Jasper Danckaerts described them in 1680, "a sight to be seen in order to observe the power and wonder of God."[2] At that time (1680) the Falls were located in the wilderness of the North American colonial frontier. The Great Falls today (2019) are all the more striking for their location within the heart of the once thriving industrial City of Paterson. The Great Falls of the Passaic stand as an enduring natural feature around which a pageant of peoples

[1] Thomas Ward (Flaccus), Passaic, A Group of Poems Touching that River: With Other Musings (New York: Wiley and Putnam, 1842), 17.

[2] Bartlett Burleigh James and J. Franklin Jameson, eds, *Journal of Jasper Danckaerts 1679–1680* (New York: Charles Scribner's Sons, 1913), 177.

moved, utilized, occupied, and transformed the landscape. From the first Americans–unidentified bands of hunter/fisher/gatherers and later Lenape family groups–through the European colonial traders and farmers, the newly independent American industrial capitalists (Society for Establishing Useful Manufactures, or S.U.M.) and innovators, to the nineteenth and twentieth century immigrant laborers and their twenty-first century descendants, all have left their cultural imprints on the land and the Passaic River. Still the Falls remain, essentially unchanged, "a sight to be seen."

Geology of the Great Falls and the Watchung Mountains

In 1967, the Great Falls of the Passaic (the Falls) was designated a National Natural Landmark.[3] It is the perfectly exposed geology of the ancient volcanic landscape which inspired the designation, and which makes the Falls so dramatic. Sometime in the Late Triassic period, as the super-continent known as Pangea began to break apart, a geologic depression or *graben* formed, now called the Newark Basin. As the basin began to fill with layers of sand and mud, the tectonic plate movements associated with the breakup of Pangea created great seas of magma below the earth's surface. In three episodes which occurred over several million years, the magma surfaced through fissures, each time covering the accumulated sediments within the Newark Basin. The cooling lava formed vertical and horizontal stress-relief joints within the deepest mass, while the upper layers formed columns, and at the surface the distinctive pillow lavas formed. Finally, a folding event pushed the basin upward to form an arc. Subsequent weathering of the arc produced the syncline mountains called the Watchungs. The three mountains, known as First Watchung, Second Watchung, and Third Watchung, were formed as the softer sedimentary layers of sandstone and shale eroded. The harder basalt (cooled lava) layers, laid down in the three volcanic episodes, were left exposed as roughly parallel ridgelines.[4] Much of this layering is visible in the north cliff wall of the Valley of the Rocks in Paterson.[5]

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[3] *Great Falls of Paterson-Garrett Mountain,* National Natural Landmark, designated 1967, enlarged 1984 (US Department of the Interior, National Park Service, Natural Landmark Brief, 2003).

[4] George T. Faust, *A Review and Interpretation of the Geologic Setting of the Watchung Basalt Flows, New Jersey,* Geological Survey Professional Paper 864-A (Washington DC: US Government Printing Office, 1975), A1.

[5] Lubov Drachevska, *The Geology of Paterson, New Jersey,* (Paterson: Paterson Museum, 1976), 7–10.

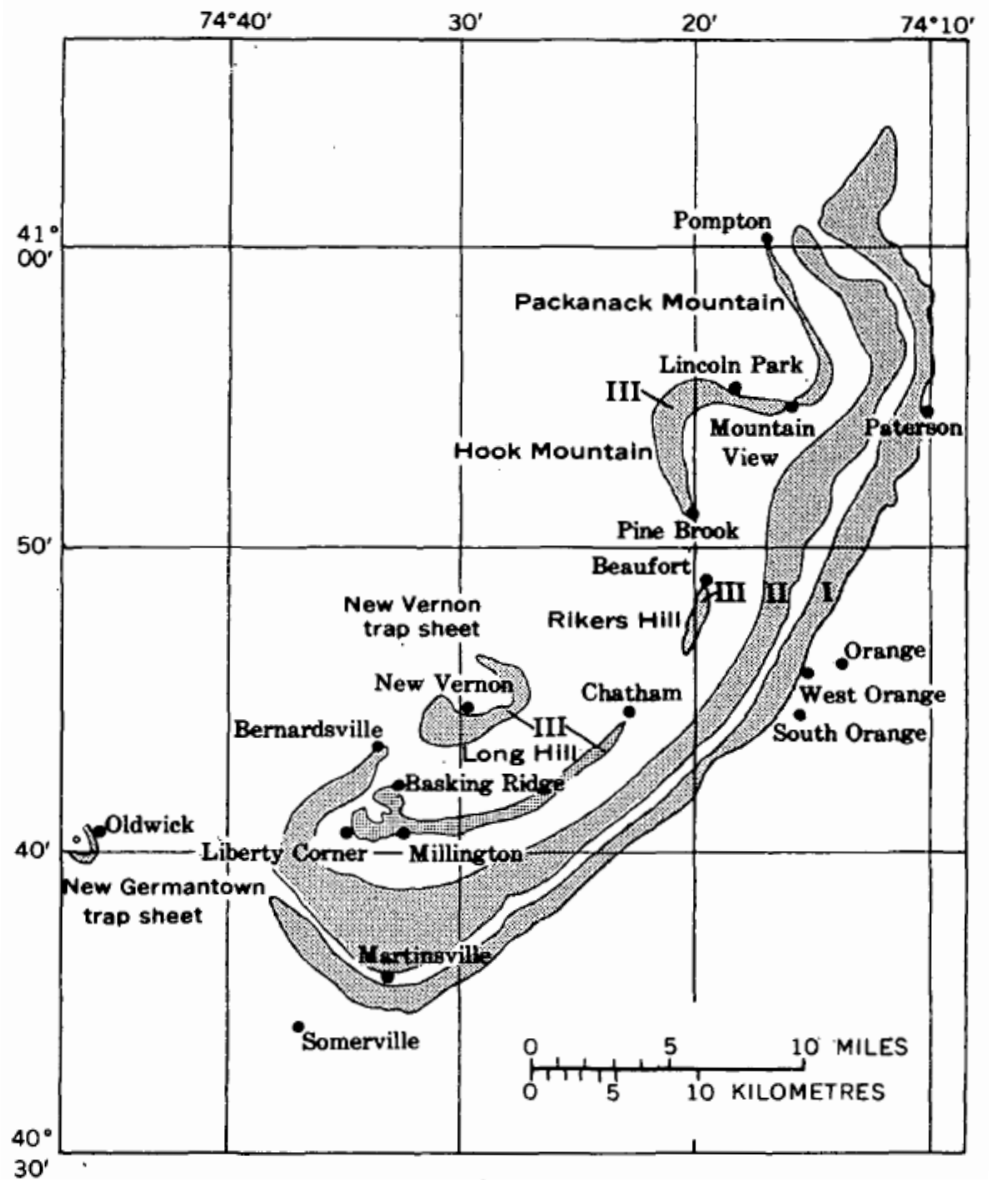

Figure 2: Sketch map showing the outline of basalt outcrops of the three Watchung Mountains. (Faust, USGS Report, 1975, p. A4)

During the last Ice Age, the Wisconsin ice sheet extended as far south as the Watchung Mountains, covering and compressing the northern half of the chain.[6] To the south, Lake Passaic began to form from the glacial runoff. As the glacier receded, the Passaic River began to drain the lake and wend its way across the Watchungs.[7] At the eastern base of Garrett Mountain, part of the First Watchung range, the river encountered

[6] Faust, *A Review,* A8.

[7] Drachevska, *The Geology of Paterson, New Jersey,* 2; Scott D. Stanford, "Glacial Lake Passaic," *Unearthing New Jersey* 3, no. 2 (Summer 2007), accessed 7/30/2019, https://www.nj.gov/dep/njgs/enviroed/newsletter/v3n2.pdf. The new river may have followed the channels of several ancient pre-glacial rivers that had formed water gaps through the mountains.

a large joint or chasm in the basalt mass, exposed from overlying layers by erosion. The water fell into the narrow chasm, approximately seventy-five feet in depth, pounding onto the sandstone rock floor below before continuing its journey eastward toward the ocean. Over time, the erosive power of the river has caused large blocks of basalt to break off and fall to the riverbed below.[8] Despite this and later impacts by human interventions, the Great Falls of the Passaic River have changed little since they began to flow at the close of the ice age around 13,000 years ago.

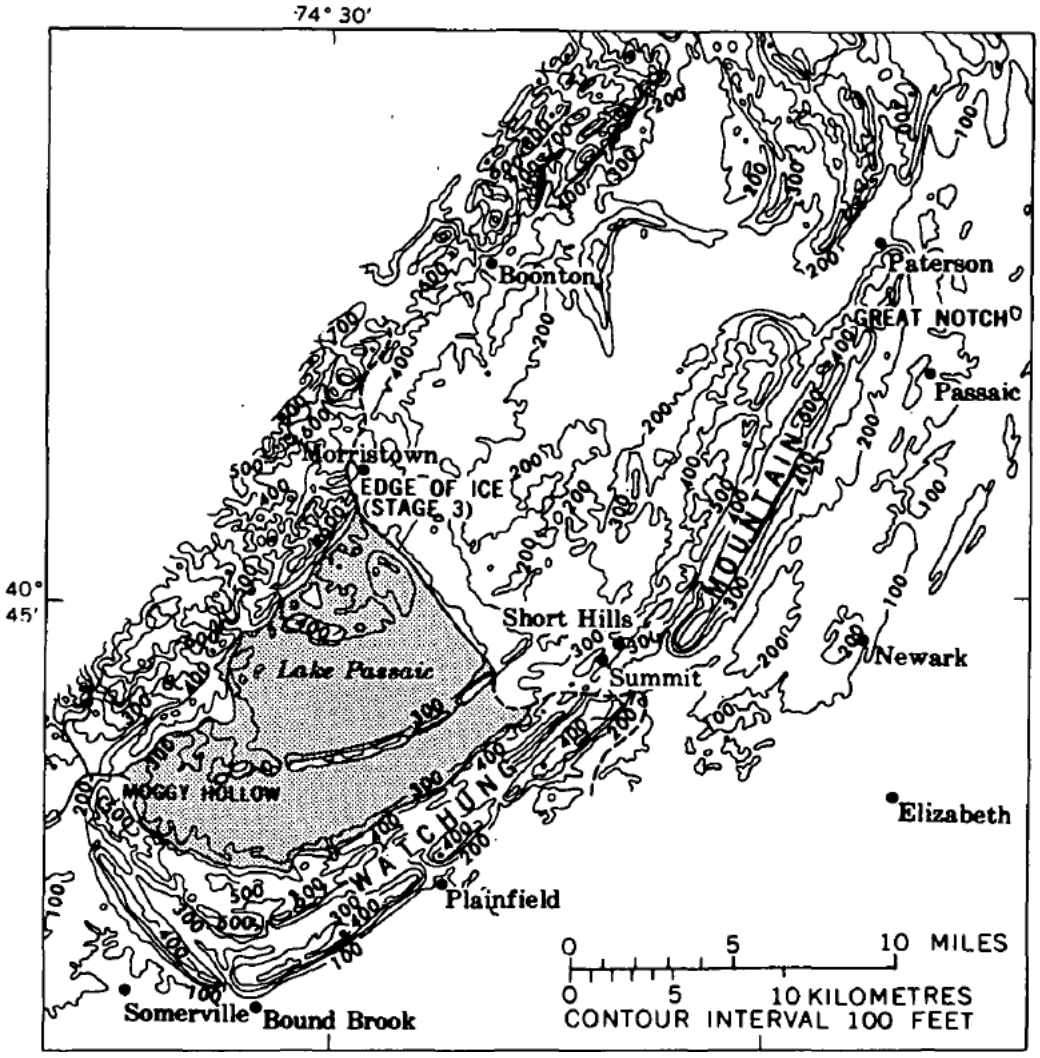

Figure 3: Southern limit of Wisconsin ice sheet over the Watchungs. (Faust, USGS Report, 1975, p. A8)

[8] Drachevska, *The Geology of Paterson, New Jersey,* 6.

Paterson Great Falls National Historical Park: Significance and Resources

The natural beauty of the Great Falls of the Passaic stands in stark contrast to the urban industrial resources that populate the Paterson Great Falls National Historical Park. The juxtaposition of nature and industry are at the heart of Paterson's history, and in fact, at the heart of much of US industrial history. It was waterpower that drove the wheels of American colonial and early republic mills and furnaces. The Paterson raceways and other water power structures exemplify the development of industrial power technologies in the eighteenth and nineteenth centuries. After the 1967 designation of the "Great Falls of Paterson" National Natural Landmark (Garrett Mountain was added in 1976), the "Great Falls of the Passaic/Society for Establishing Useful Manufactures Historic District" (Great Falls/S.U.M. Historic District or GFHD) was listed on the National Register of Historic Places in 1970. In 1976, the GFHD was expanded and designated a National Historic Landmark (NHL), and in 1985, the district boundary was again enlarged. The 1985 boundary expansion provides the most-succinct Statement of Significance for the NHL district:

> The Great Falls/S.U.M. Historic District contains one of the most significant engineering and industrial complexes in the United States. Alexander Hamilton and other supporters organized the Society for Establishing Useful Manufacturers [sic] to achieve America's independence from British manufactures and demonstrate her own profitability. With the major water power to be harnessed from the Great Falls of the Passaic River, and the original engineering plan of Pierre Charles L'Enfant, Paterson developed into an important eighteenth and nineteenth century industrial center for cotton, silk, iron and locomotive production.[9]

The significance of the Paterson Great Falls National Historic Park, as stated in the "General Management Plan" (GMP, 2016), expands upon the NHL district statement, addressing the potential for the Park's resources for interpretation and to enhance the visitor experience:

- The Great Falls of the Passaic River, with its natural chasm and 77-foot waterfall, provides an extraordinary scenic resource in the midst of an industrialized city and opportunities for relaxation, contemplation and inspiration.
- Paterson Great Falls National Historic Park and the National Historic Landmark district provide one of the best opportunities to view a complete hydropower system from its source above the Great Falls of the Passaic to its transformation into power for the mills and the surrounding community.

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[9] Len Rothe, "Great Falls/SUM Historic District Extension (Argus Mill)," National Register of Historic Places Collection (Passaic County, New Jersey, August 14, 1986). See Appendix G.

Alexander Hamilton's vision of a model manufacturing city, a central part of his economic strategy for the nation, is embedded in this industrial, cultural and natural landscape.

- Paterson's raceway system illustrates American ingenuity as the country grew to become a major industrial nation. The raceways offer an outstanding opportunity to interpret the city's industrial past and the Society for Useful Manufactures' [sic] role as a manufacturing incubator making it possible for immigrants to start businesses with limited resources and capital.
- The entrepreneurship and innovations of Paterson's industrialists and workers allowed the city to thrive and evolve over time in a long continuum of industrial use which continues today. Paterson's success can be attributed in large part to immigrants who brought their creativity and experience to the city seeking a better life; a trend which has continued throughout the city's history.
- Hinchliffe Stadium is one of the best examples of a professional Negro League baseball venue. The location of the stadium was specifically sited above the Great Falls so patrons could have a commanding view of Paterson's ever-evolving industrial, social and natural landscape.[10]

The Park boundaries encompass approximately fifty-two acres, including the resources that best represent the nationally significant themes stated in the GMP.

The following natural and cultural resources are located within the Park boundaries (**Figures 4 and 5**) and are here identified as either contributing or non-contributing to the significance of the Park. Resource descriptions are quoted from the "Paterson Great Falls National Historical Park, Draft General Management Plan," January 2016 (#s 1-4) and the 2017 NHL Cultural Resource Inventory (#s 5-19 and 21-24), unless otherwise noted:

1. The Great Falls of the Passaic River—Including the chasm, waterfall, and the Passaic River as it flows through the park. [contributing]
2. Valley of the Rocks—A natural area downstream of the Great Falls, along the northern bank of the Passaic River. [contributing]
3. Mary Ellen Kramer Park—Community parkland with viewing areas and trails at the top of the falls; also includes the Great Falls Development Corp. building and Pump House. [contributing]
4. Overlook Park—The primary overlook of the Great Falls, also includes the S.U.M administration building (currently park headquarters) and steam plant foundation. [contributing]

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[10] "Paterson Great Falls National Historical Park, Draft General Management Plan," January 2016, US Department of the Interior, National Park Service, 9.

5. S.U.M. Upper Raceway and Tailrace—The S.U.M. Upper Raceway begins at a lock located at the S.U.M. Gatehouse. It travels east and then southeast to the Dolphin Mills Complex before becoming a tailrace (via a concrete spillway reconstructed in 1982) that loops back up to the northwest, continuing behind Rogers Locomotive Co. buildings on the west side of Spruce Street and ending near Ivanhoe Wheelhouse. The raceway's walls were constructed of brown sandstone, concrete, and natural rock, and its bottom was lined with a mixture of clay and sand. A penstock which runs underneath McBride Avenue is visible immediately to the east of the S.U.M. Gatehouse, below the spillway to the Middle Raceway. An elevated walking path which begins to the south of the intersection of McBride Avenue and Spruce Street overlooks this drop between the Upper Raceway's tailrace and the Middle Raceway and continues to the Rogers Locomotive storage building (not included in Park boundary) before crossing over to another area of the Upper Raceway. The Upper Raceway was the last of the S.U.M. raceways to be constructed. To build this section, the S.U.M. raised the level of an earthen embankment which blocked water from leaving a nearby reservoir. Leakage problems led the S.U.M. to alter the water's path in 1838 by creating a new masonry dam downstream of the wooden one which it replaced; this alteration made the reservoir obsolete, although it was not filled in until 1846. [contributing]

6. S.U.M. Gatehouse—The S.U.M. gatehouse is a single-story board and batten building set over the lock which forms the beginning of the S.U.M. Upper Raceway, at the intersection of McBride Avenue and Spruce Street. It is located below street level, supported by a brown sandstone wall on its southern end and by concrete on its northern end. The entrance is on the west elevation and can be accessed by a non-historic set of stairs and small bridge which connect it to McBride Avenue. The building has a standing seam metal roof, and its window openings have been boarded shut. This S.U.M. gatehouse was constructed upon the removal of a reservoir which had been part of the S.U.M. raceway system until 1838, when a dam in the Passaic River made it obsolete. [contributing]

7. Ivanhoe Wheelhouse—The Ivanhoe Mill Wheelhouse is located on the west side of Spruce Street, where the Upper Raceway's tailrace drops through a spillway to the Middle Raceway. The front (east) section of the wheelhouse is a single-story structure with a shed roof. It has entrances on the northeast (Spruce Street) and northwest elevations. The back (west) section of the building stands on an arched foundation which follows the path of the Upper Raceway's tailrace, which ran from south to north, parallel to the primary section of this raceway. A circular infilled opening on the northwest elevation of the Ivanhoe Wheelhouse

indicates where the Upper Raceway penstock once entered the back section of the building. This building provided power to Ivanhoe Mill (no longer standing), which was built circa 1850 by H. V. Butler and Company. In 1866, the company merged with or was incorporated into Ivanhoe Manufacturing Co., and Henry V. Butler became the company's president. Ivanhoe Wheelhouse contained three turbines which supplemented the steam-powered engines within Ivanhoe Mill. Ivanhoe Manufacturing Co., which produced paper, defaulted on its mortgage in the 1880s and the property went through the ownership of several different companies before being sold to the S.U.M. in 1901. [contributing]

8. Rogers Locomotive Co. Erecting Shop—The Rogers Erecting Shop, located at the southeast corner of Spruce and Market Streets, is a 3.5-story brick building which extends approximately 220 feet along Spruce Street. Its current primary entrance is located in the southernmost bay of the southwest elevation, which comprises thirteen bays in total. Each of the other twelve bays features a large set of doors at the first story, topped by paired transoms and metal lintels with decorative rosettes. The second and third stories feature sash windows separated by brick piers. A stone date marker near the center of this elevation reads "1835 Rebuilt 1874 Rogers Locomotive & M. Works." A monitor roofline runs the full length of the building, above a decorative brick cornice. The building's northwest elevation is similar in form to that of the Ryle Union Works building across Market Street (not within Park boundaries): it is five bays wide, and the central bay has a large hoisting pier in the gable's peak. A two-story end-gabled structure is attached to the building's northwest elevation and is in ruinous condition. This building is the oldest extant structure within the Rogers Locomotive Company complex. The double doors on the primary elevation enabled the transport of finished locomotives out of the building. It now hosts the Paterson Museum. [contributing]

9. Visitor Center—This single-story frame building is located on the southeast corner of the intersection of McBride Avenue and the McBride Avenue extension. It is set back from the street and faces northwest, toward the intersection. A parking lot occupies most of the parcel, and the S.U.M. Middle Raceway runs behind the building along the former Passaic Street. This building has painted board and batten walls and a projecting shed roof which is supported by painted wood corbels. The primary elevation is three bays wide and includes a central entrance which protrudes slightly from the building, with projecting windows on either side. [non-contributing]

10. S.U.M. Middle Raceway—This is the oldest section of the S.U.M. Raceway system. It begins at the spillway next to the Ivanhoe

Wheelhouse and continues northeast under Spruce Street and along the former Passaic Street. It turns to the north behind Hamilton Mill (not within Park boundaries), crosses under McBride Avenue Extension, and reaches the spillway to the lower raceway in the ATP (Allied Textile Printers) site. The Middle Raceway's tailrace follows the western side of Mill Street, although it is only visible in front of the Hamilton Mill Site. The Middle Raceway's walls are sandstone, natural embankment, and concrete, and the bottom was likely soil and mud over sand. Foundations of former buildings form part of the raceway's wall along Passaic Street. The Raceway is cluttered with debris. [contributing]

11. Middle Raceway Tailrace—The Middle Raceway's tailrace is daylighted along the western side of Mill Street, from the McBride Avenue Extension to the S.U.M. Passaic Street Bridge. It continues underground along Market Street. The tailrace features stone walls, and its bottom is overgrown with brush and littered with debris. The front portion of the Hamilton Mill building bridges the tailrace and abuts the sidewalk. At various intervals, semicircular openings in the stone walls of the tailrace, extending under buildings such as the Hamilton Mill, have been infilled. [contributing]

12. Middle Raceway Gate House [listed as "Single-story Structure on the Middle"] This gable-roofed brick structure is located over the Middle Raceway, before it curves to the north behind the Hamilton Mill Building. It is supported by metal I-beams resting on the Raceway's stone walls. Its primary (southeast) elevation faces a pedestrian path which runs along the former Passaic Street, separating this building from the Danforth and Cooke Building. [contributing]

13. Passaic River Dam—The S.U.M. constructed this dam in 1838 to replace an earlier one which had been located further upstream. This rendered a preexisting reservoir (located southeast of the dam) obsolete, resolving issues of leakage at that site. An additional three feet of height, composed of stone with wooden flashboards, was added to the dam in 1864, and further alterations were made in 1868. A small section of bridge survives above the dam. [contributing]

14. Hydroelectric Plant—The hydroelectric plant is located on the eastern side of the Passaic River, below the Great Falls and down a steep slope from McBride Avenue. The building's primary elevation faces south, and its west elevation is constructed into the rock face. A six-story brick stair tower is located at the southwest corner of the building, abutting the primary elevation and the rock face and providing access to the building from above the falls. The tower is capped by a standing seam metal roof. The primary elevation features a central door with a large arched transom above, separated by a stone date plaque which reads

"1791 S.U.M. 1914." Also on this elevation, a round window is set into the gable. The east elevation is five bays wide and features large arched windows which extend nearly the full height of the interior space. The stone cornice's decoration is similar to that on the field house, which is part of the same complex, and of the S.U.M. administration building, which overlooks this structure from McBride Avenue. Penstocks on the western side of the structure capture water from above the falls, which travels through rock at the river's bend and falls sixty-seven feet to the plant. The generator room originally held S. Morgan Smith horizontal-shaft double-runner turbines. One older turbine remains; all other turbines have been replaced with modern equipment. [contributing]

15. Field House—The field house is a single-story brick building which is part of the hydroelectric plant complex, located at street level above (and southwest of) the main plant building. Its primary entrance is on the north elevation, where a large door would have allowed for large equipment to be transported into and out of the building. The end-gabled building features a stone cornice and sills. The windows have been boarded shut. [contributing]

16. Great Falls Arch Bridge—The Great Falls Arch Bridge overlooks the Great Falls of the Passaic River. It extends from the upper level of the S.U.M. hydroelectric plant and field house on the eastern side of the river to Mary Ellen Kramer Park on the western side. (Due to the bend in the falls at this point, the bridge actually extends south-north.) The current water main, running parallel to the bridge, is a replacement of an earlier pipe which was part of the Passaic Water Company's system. When it was replaced in 1983, a deck for pedestrian access was removed. [contributing]

17. Steam Generating Plant Foundation—Overlook Park's parking lot is supported by the foundation of the 1915 steam plant, which was constructed shortly after the hydroelectric plant to supply power during periods when the water level was too low and insufficient to generate electricity. The steam generating plant building was struck by lightning in 1958 and demolished soon after that, leaving only the two-story foundation wall. [contributing]

18. S.U.M. Administration Building—The two-story S.U.M. Administration Building is located immediately to the north of the intersection of McBride Avenue and Spruce Street. The building is brick, and it features a stone cornice under a side-gabled roof. The stone decoration along the cornice is similar to that on the S.U.M. Hydroelectric Plant and Steam Generating Plant [no longer standing]. The primary (east) elevation is three bays wide, with an entrance in the central bay which is sheltered by a flat cantilevered metal roof above. Both stories have wooden sash

windows, in a one over one configuration on the first story and a nine-over-one configuration on the second. The primary elevation faces Overlook Park's parking lot, and a path extends from McBride Avenue along this elevation to a viewing area which overlooks the Great Falls. [contributing]

19. S.U.M. Lower Raceway—The S.U.M. Lower Raceway begins at the ATP site and extends along the northern side of Van Houten Street. Some of the industrial buildings on the street extend over the raceway, while others are set back from the street and accessible by bridges. The raceway features stone walls, and its base is overgrown with vegetation (grass in most areas) and littered with debris. [contributing]

20. Allied Textile Printers Site and Ruins—The ATP site is currently a ruin, ravaged by a series of fires occurring after industrial activity ceased in 1982. Nonetheless it contains many notable features of historical and archaeological significance including waterpower features such as raceways and wheelpits, a quarry, the ruins of at least five water-powered nineteenth-century mills, two steam plants with smokestacks, and the ruins of extensive textile dyeing and finishing operations which occupied a large portion of the property from the 1910s to 1980s. A centerpiece of the ATP site is the Colt Gun Mill, an industrial site with nationally significant associations. The brownstone mill building (now a shell) was built in 1837 to produce Samuel Colt's famous revolver and was the place where John Ryle established what would become Paterson's world renowned silk industry in 1840. . . . Within the site limits are several key properties, the most important of which are the Colt Gun Mill, the duck mill (Passaic Mill No. 1), the Todd Mill, the Mallory/Waverly Mill and the older sections of the dye works located along the riverbank. There are numerous locations throughout the site of archeological sensitivity including possibly a late-eighteenth-century sawmill site and an early nineteenth-century nail mill, not to mention the various arteries of the S.U.M. waterpower system expressed in the form of raceways, gates and wheel pits.[11] [contributing]

21. Raceway Footbridges—Several small bridges provide access over the raceways, linking the mills with their adjacent streets. These include: several bridges to the ATP site along the bend in Van Houten Street; two bridges to Phoenix Mill (not within Park boundaries); one bridge which transitions to an alley between Harmony and Industry Mills (not within Park boundaries); and one bridge over the Upper Raceway by the Rogers Locomotive Company Frame Fitting Shop and Administrative Building (not within Park boundaries). This last footbridge may correspond to the location of a flume which was part of the Upper Raceway

[11] Hunter Research, *Allied Textile Printers, Cultural Resource Study, Volume II.*

system. [contributing]

22. Conduit Gate House—This single-story brick building has a steeply-pitched hip roof with hexagonal slate shingles. The building features a polygonal annex on the building's southeast side, and the annex includes the building entrance. Two rows of glazed header brick courses form a semicircular arch over the door, and additional glazed and painted bricks form belt courses on both the annex and the primary structure. The building's windows are arched, and the northeast and southwest elevations each have two shed dormers. The building was identified as a machine shop and meter testing site on a 1915 Sanborn map. It is currently located within the boundaries of Mary Ellen Kramer Park. [Note: this building does not appear on the 2016 Draft GMP site map] [contributing]

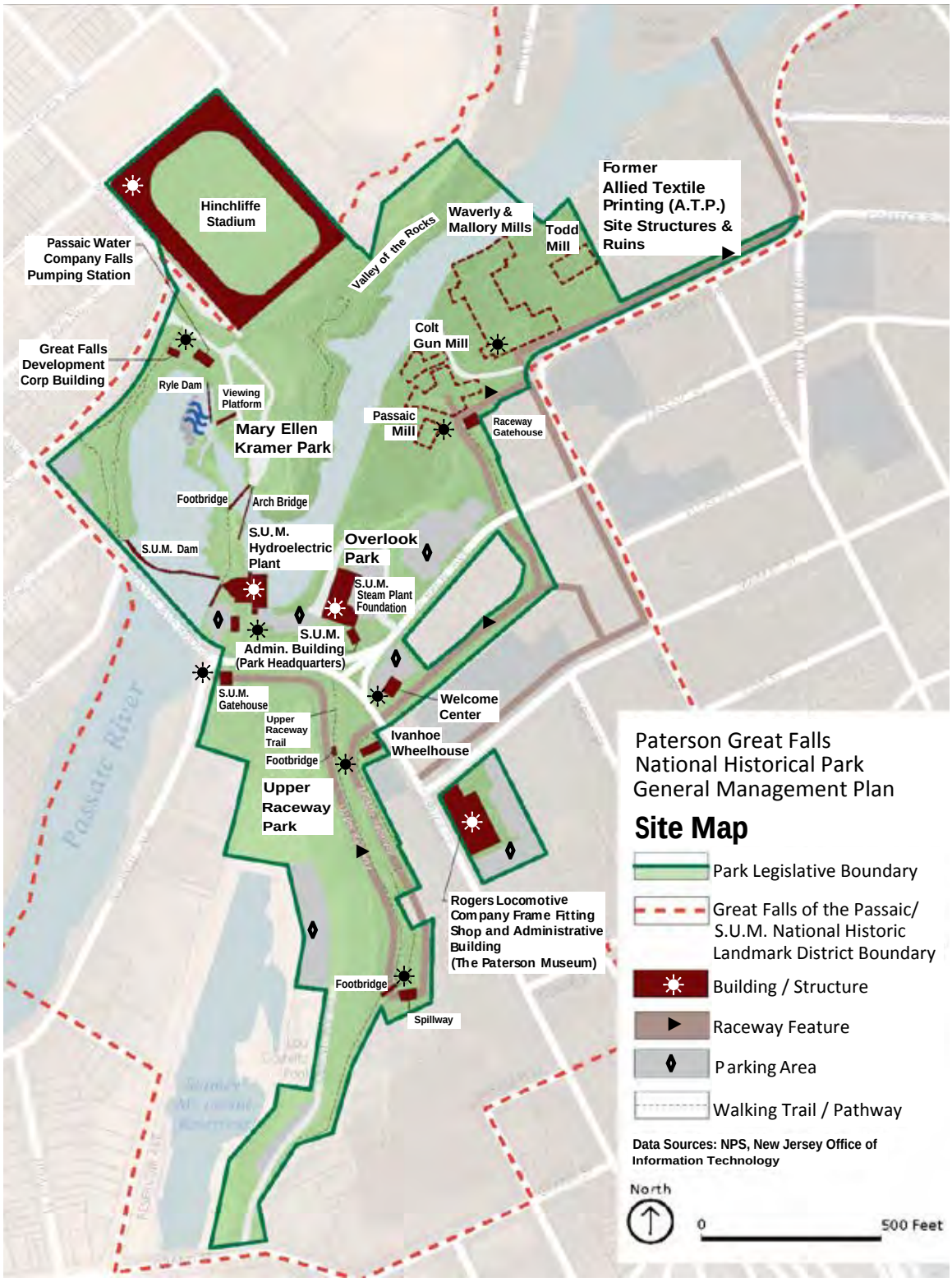

Figure 4: Paterson Great Falls National Historical Park Site Map, showing resources located within the park boundaries. (GMP, 2016)

23. Remains of 1876 Steam and Boiler Plant—The remains of this single-story brick building are located in Mary Ellen Kramer Park. It has stone and glazed-brick belt courses, as well as additional glazed bricks which form diamond patterns on the northwest and southeast elevations. The cornice, which is below a wooden fascia, includes bricks laid in dogtooth and dentil courses. The building's primary entrance is located on the northeast elevation, with a modern sign above the door which reads "Great Falls Development Corporation" and another above the central paired windows which reads "Great Falls Park." A rolling garage door on the northwest elevation allows for equipment to be transported into and out of the building. This building was part of the Passaic Water Co. pumping station, which was linked to the company's reservoirs and facilities on the western side of the Passaic River. [contributing]

24. Passaic Water Co. Pump House—Passaic Water Co.'s pump house is set into the slope below Maple Street, in what is now Mary Ellen Kramer Park. It is a brick structure with a central protruding section. On the right side of this section is a plaque reading "Passaic Water Company 1878 John Ryle President." This structure was part of the Passaic Water Co.'s pumping station, located adjacent to the steam and boiler plant. [contributing]

25. Hinchliffe Stadium—Hinchliffe Stadium is a cast concrete open-air stadium located at the southeast corner of Liberty and Maple Streets, on the western side of the Passaic River and adjacent to Mary Ellen Kramer Park. It measures 440 by 417 feet, with rounded corners. At the west and north corners of the stadium, pairs of entrances are articulated with the inscription of "Hinchliffe Stadium" and flanked by small hipped-roof structures which served as offices. The perimeter of the stadium features regularly-spaced piers, which are stepped up to follow the street grade and topped with terra cotta coping. Circular ceramic medallions on these piers depict the four field events of the classical Olympic games (relay, javelin, hammer, and discus). The stadium is located over the location of one of three reservoirs which were on this side of the Passaic River. It is one of the only extant regular home fields of a Negro League Team in the region. In 2013, it was individually listed as a National Historic Landmark.[12] [contributing]

26. Mount Morris Quarry—The substantially quarried remnant of the rock outcrop known as Mount Morris is located on the south(west) bank of the Passaic River northeast of Overlook Park. The quarry site included a rock-crushing mill and was later entirely occupied by the Standard Silk

[12] Paula S. Reed & Assoc., Inc. "Hinchliffe Stadium," National Historic Landmark (Washington, DC: US Department of the Interior, National Park Service, 2013).

Dyeing Company, and is included within the ATP site boundary. The south(west) cliff wall of the quarry provides a view of the geologic history of the Passaic valley. The quarry site is currently (2019) overgrown. [contributing]

27. The "Deer's Leap"—As described by local historian William Nelson in 1882: "The narrow point of rock projecting toward Spruce street, between the chasm and the back-race, was in the early days known by the whites as the Deer's Leap."[13] [contributing]

28. Remnant wall of the "Yellow Mill"–A brown sandstone block wall section, visible within the courtyard of the Essex Mill Apartments on Mill Street, is thought to be oldest extant mill element in the district. [contributing status unclear]

When the S.U.M. ended its 153-year corporate run in 1945, the remaining S.U.M.-owned property was transferred to the City of Paterson. Though there were interim owners of a few of the parcels, today (2019) much of the land and resources remains in the ownership of the City of Paterson, including the ATP site, the Rogers Locomotive Erecting Shop, Overlook Park, hydroelectric plant, and Mary Ellen Kramer Park. As per the language of the Park's enabling legislation (Appendix H), the NPS will acquire "sufficient land or an interest in land within the boundary of the Park to constitute a manageable unit."[14] Thus, according to Park Superintendent Darren Boch, "the NPS only intends to acquire Mary Ellen Kramer and Overlook Parks, with all other resources within the boundary retained by the city of Paterson and managed compatible with the purposes of the national park."[15] Currently the NPS has title to the Visitor Center and its half-acre parcel. Future plans include the acquisition of Overlook Park in 2020, with Mary Ellen Kramer Park coming later. Hinchliffe Stadium is expected to remain in the possession of the Paterson School System. At least part of the Valley of the Rocks is owned by the Passaic Valley Water Commission, while the Passaic River and Great Falls are under State of New Jersey jurisdiction.[16] The legislation specifically calls for cooperative agreements among the interested parties to manage NPS access to the properties for public interpretation and to assist in preservation projects. See chapter 7 for more information about the evolution of the Paterson Great Falls National Historical Park idea.

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[13] William Nelson and Charles Shriner, *History of Paterson and its Environs, Volume 1* (New York: Lewis Historical Publishing Co., 1920), 22.

[14] Public Law 111–11 "Title VII–National Park Service Authorizations, Subtitle A–Additions to the National Park System, Sec. 7001, Paterson Great Falls National Historical Park, New Jersey." (123 Stat. 1183; Date 3/30/2009).

[15] Supt. Darren Boch, personal communication by email, 8/30/2019.

[16] Supt. Darren Boch, personal communication by email, 8/30/2019.

The Great Falls of the Passaic are surrounded by the city of Paterson, situated within the bustling greater New York metropolitan area, and yet the Falls continue to dazzle the senses as an example of the raw power of nature, just as Jasper Danckaerts saw them in 1680. It is fitting then, that the natural beauty of the Great Falls of the Passaic be preserved, like Yellowstone, Yosemite, and the Grand Canyon, as a National Park, along with the human history—fleeting in the lens of geologic time—which surrounds it.

Figure 5: 2007 aerial photograph of the ATP site, showing site boundary and locations of ruins.
(Hunter Research, ***ATP CR, Volume 1***, citing New Jersey Department of Environmental Protection)

CHAPTER 1

Peopling the Great Falls of the Passaic Landscape

> I have not written to excite astonishment, but for the information of those who are desirous of knowing the true history of those people, who, for centuries, have been in full possession of the country we now inhabit. . . .
>
> John Heckewelder, 1817[1]

Introduction[2]

The Mid-Atlantic region, stretching from New York to North Carolina, was occupied by people–the first Americans–for thousands of years before European explorers, traders, and settlers arrived and claimed the newly "discovered" land. By the late sixteenth century, indigenous American tribal groups or associated bands had established a well-developed network of territories in which they lived, hunted, traded, and over which they waged wars. Alliances between groups were formed over shared language, kinship, trade, or common enemies.

The Lenape (Lenni Lenape or Delaware) who occupied the lands later called New York, New Jersey, Pennsylvania, and Delaware, were a loose affiliation of kinship bands. Much of the land they occupied was located along the *Mahicantuck* (Hudson River) and *Lenapewihituck* (Delaware River), and their drainages, including the *Pasaic* or *Pasáiek* (Passaic River).[3] The Lenape viewed the land as sacred, given to them by *Mannito*

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[1] John Heckewelder, *An Account of the History, Manners, and Customs of the Indian Nations Who Once Inhabited Pennsylvania and the Neighboring States* (first published 1819 by the American Philosophical Society, republished by the Historical Society of Pennsylvania, 1881), xxiii.

[2] This Introduction and the following summary contexts—Algonquian Roots; Peoples of the Mid-Atlantic before 1650; Lenape of the Mid-Atlantic, CE 1600 to 1650; and European "Discovery" and Settlement, The Anglo-Dutch Wars and a Renewed British Claim—are taken in part from the Lenape and European Contact contexts developed for First State National Historical Park Historic Resource Study (Paula S. Reed and Edith B. Wallace, *First State National Historical Park, Delaware, Historic Resource Study*, September 2018).

[3] Edward Manning Ruttenber, *History of the Indian Tribes of Hudson's River* (Albany, NY: J. Munsell, 1872), 41, 45, 376, https://archive.org, accessed 1/31/2019; Robert S. Grumet, "Beyond Manhattan: A Gazetteer of Delaware Indian History Reflected in Modern Day Place-Names" (New York State Museum, Record 5, 2014), 49.

(Creator), "well stocked with game of every kind for their subsistence, and… corn, pumpkins, squashes, beans and other vegetables for their nourishment; all which blessings their ancestors have enjoyed for a great number of ages."[4]

The vast history of the first Americans, the peoples living on the North American continent before European contact, is a significant segment in the continuum of American history. Though largely unwritten, this early cultural record is chronicled in oral traditions handed down over the millennia, while some is discernable through the journals of the earliest European explorers, and some is physically preserved in the ground awaiting archeological investigation. Later European settlers' cultural adaptations also provide clues to pre-contact lifeways. American roads often trace ancient paths along the easiest, driest, or most direct routes. Many American place-names and other common words draw heavily upon the indigenous languages. Corn, beans, squash, and tobacco were indigenous cultivars adopted by European emigrants. These products helped the new arrivals to survive and even became the foundation of a thriving colonial economy.

Algonquian Roots

The Algonquian language group, of which it is said the Lenape are "the Grandfathers," is the largest American Indian language group in North America.[5] Today described as "the Algic family of languages," some linguists locate the genesis of the language somewhere in the area of the Great Lakes. From there, dialect groups fanned out through much of southern and eastern Canada, along the length of the Mississippi as far south as Tennessee, to New England, eastern New York, New Jersey, the Mid-Atlantic, and south along the coast to North Carolina, and even as far west as the Great Plains and California.[6] Thirty-nine Algonquian dialects have been identified by linguists, including two Lenape dialects (Munsee north of the Raritan River and Unami to the south), nine Cree dialects, seven Ojibwe, also "Kickapoo, Menominee, Meskwaki Sauk (Sac and Fox), Miami-Illinois, Potawatomi, Shawnee, Abnaki-Penobscot, … Maliseet-Passamoquoddy, Mi'kmaq, Arapaho, Gros Ventre, Blackfeet, and Cheyenne, as well as Wiyot and Yurok,… Virginian and Carolinian Algonquian, Mohegan-Pequot, Mahican,

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[4] Heckewelder, *An Account of the History*, 114. Heckewelder was a Moravian missionary who lived among the Lenape in the eighteenth century.

[5] "The Ancient Ones," *Nanticoke and Lenape Confederation Learning Center and Museum*, last updated May 2010, http://nanticokelenapemuseum.org/museum/the-ancient-ones/, accessed 8/25/2016; see also Heckewelder, *An Account of the History*, xli. Digitized on books.google.com.

[6] Brian Swann, ed., *Algonquian Spirit* (Lincoln: University of Nebraska Press, 2005), xii; see also Lyle Campbell, *American Indian Languages: The Historical Linguistics of Native America* (New York: Oxford University Press, 1997), Map 11, 361. According to Swann, the Algic language family began its development around 3000 years ago. The Unami dialect is further divided into Northern Unami and Southern Unami.

Massachusett-Narragansett, and Wampanoag."[7] John Heckewelder described the Lenape Unami dialect, spoken by the Lenape who lived primarily in southern New Jersey, southeastern Pennsylvania, and northern Delaware, as "the purest and most elegant dialect" and thus likely "the head of the national family" or the "grandfather" of other Algonquian-speaking tribes.[8]

According to the Lenape migration legend, as retold by Heckewelder in 1817, Lenape groups began arriving in the Mid-Atlantic region sometime after approximately CE 500.[9] This migration would have occurred during the Middle Woodland cultural period (CE 1 to 1000), as defined by archeologists.[10] To date, the archeological record of the Mid-Atlantic does not indicate an identifiable inward migration of people during the Middle Woodland period, and thus does not currently provide scientific support for the Lenape migration story.[11] The archeological record does indicate that the region was occupied long before the Middle Woodland period by unidentified groups, who may or may not be Lenape ancestors.

Peoples of the Mid-Atlantic before 1650

The people living in the Mid-Atlantic region before contact with European explorers, traders, and settlers left clues to their lifeways, cultural markers which survive in archeological contexts. Most commonly these are stone (lithic) tools, particularly projectile points which appear to follow identifiable stylistic trends. Archeologists divide the thousands of years of human occupation into cultural periods, largely based on changes in living patterns typically triggered by changes in the climate and surrounding ecology.

Archeological evidence of early human occupations in the Mid-Atlantic are documented to a greater degree in parts of New York, Pennsylvania, and Delaware. In New

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[7] Swann, *Algonquian Spirit*, xii. Some languages formerly considered "extinct" are now being revived through tribal efforts.

[8] Heckewelder, *An Account of the History*, 326–327.

[9] Heckewelder, *An Account of the History*, 47–51. The dates of Heckewelder's original manuscript (1817) and its publication (1819) are important because it pre-dates the 1830s publication of Rafinesque's purported translation of the *Walam Olum*, which he claimed to be from Lenape stick pictographs and a written manuscript. The *Walam Olum* was proven to be a hoax in 1994 by David M. Oestreicher (see Oestreicher, "The Tale of a Hoax," in Swann, *Algonquian Spirit*, 3). Heckewelder's story indicates that the Lenape migration oral tradition existed before the hoax perpetrated by Rafinesque.

[10] BCE (Before Common Era) corresponds to BC; CE (Common Era) corresponds to AD. New Jersey archeologist Herbert Kraft identified the cultural periods as Paleo-Indian, ca.10,000 to ca. 8000 BCE; Early Archaic, ca. 8000 to ca. 6500 BCE; Middle Archaic, ca. 6500 to ca. 4000 BCE; Late Archaic, ca. 4000 to ca. 2000 BCE; Terminal Archaic, ca. 2000 to ca. 1000 BCE; Early Woodland, ca. 1000 BCE to ca. 0; Middle Woodland, ca. CE 1 to 1000; Late Woodland, ca. CE 1000 to ca. 1650; Historic Contact, ca. CE 1650 to ca. 1700. Herbert Kraft, *The Lenape-Delaware Indian Heritage: 10,000 BC to AD 2000* (Lenape Books, 2001), 34.

[11] Jay F. Custer, *Prehistoric Cultures of the Delmarva Peninsula: An Archaeological Study* (Newark: University of Delaware Press, 1989), 310–311.

Jersey, documentation of sites along the Delaware River is better than sites on the coast and in northern New Jersey. Industrial development along the Passaic River, particularly in and around Paterson, occurred before the modern archeological methods of systematic survey and excavation. Therefore, most of what is known currently about prehistoric human occupations in the Paterson area is based upon surface collections completed in the nineteenth and early twentieth centuries.[12] In 1912, under the direction of the New Jersey State Geological Survey, archeologist Max Schrabisch investigated an estimated 370 sites in northern New Jersey, twenty-five of which were located in the Paterson area (see discussion below). Relying largely on surface collection, the sites discovered by Schrabisch represent mostly historic period Lenape occupations, though some probably included earlier components below the surface.[13] The Paterson Museum holds the voluminous personal collection of Carl Schondorf, including artifacts collected by Schrabisch, which is currently being cataloged and interpreted by archeological consultant Anthony DeCondo.

The Paleo-Indian Period began approximately 10,000 BCE (Before Common Era) and lasted to about 8000 BCE. Archeologists consider Paleo-Indians to be the first humans who occupied the Mid-Atlantic region.[14] As with much of the continent, the earliest cultural materials at the New Jersey sites were Clovis fluted points. These lanceolate-shaped spear points, with long hafting channels called "flutes," were particularly suited to hunting the large game found in the cold, mixed grassland/boreal/deciduous environment of the Mid-Atlantic at the end of the Pleistocene Epoch.[15] In the Piedmont region of northern New Jersey, the shrinking Glacial Lake Passaic and Glacial Lake Hackensack became marshlands attractive to game animals, waterfowl, and a variety of wild plants.[16] It was a climate still influenced by the retreating glacier, however, notes New Jersey archeologist Peter Pagoulatos, making resources "seasonally unpredictable and widely scattered across

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[12] Edward S. Rutsch, William Sandy, Leonard Bianci, and Patricia Condell, *Route 21 Freeway Extension Project, Technical Environmental Study, Volume IV, Archaeology* (Federal Highway Admin., Region I, and New Jersey Dept. of Transportation, 1992), 351; Kraft, *The Lenape-Delaware Indian Heritage*, 35; see Alanson Skinner and Max Schrabisch, *Bulletin 9: A Preliminary Report of the Archaeological Survey of the State of New Jersey made by the Department of Anthropology in the American Museum of Natural History, Clark Wissler… Curator, under the direction of the State Geological Survey* (Trenton, NJ: MacCrellish & Quigley, State Printers, 1913); Dorothy Cross, *Archaeology of New Jersey*, Volume I (Trenton, NJ: The Archaeological Society of New Jersey and the New Jersey State Museum, 1941).

[13] Skinner and Schrabisch, *Bulletin 9*, 34. Dorothy Cross's 1941 survey of New Jersey sites included excavation at thirty-nine sites across the state.

[14] Peter Pagoulatos, "Paleoindian Site Location in New Jersey," *Archaeology of Eastern North America*, Vol. 32 (2004), 123, https://www.jstor.org/stable/40914478.

[15] Kraft, *The Lenape-Delaware Indian Heritage*, 48, 56–57; large animals in northern New Jersey included elk, white-tailed deer, caribou, mammoth, and mastodon (Pagoulatos, "Paleoindian Site Location in New Jersey," 125).

[16] Pagoulatos, "Paleoindian Site Location in New Jersey," 130. While hunting played a large role in the Paleo-Indian diet, evidence of plant remains were found in a hearth at the Shawnee-Minisink site in the Upper Delaware Valley of Pennsylvania, where Clovis points were also found. Plant remnants found in the hearth included grape, amaranthus, blackberry, smartweed, ragweed, sedge, hackberry, and hawthorn plum; fish bones were also found. (Custer, *Prehistoric Cultures*, 94–97)

the landscape."[17] Thus, it appears that Paleo-Indians of the Mid-Atlantic subsisted following a highly mobile, seasonal, hunting and gathering lifeway, requiring a small group social organization likely structured around family units. Three Paleo-Indian sites have been identified on the Passaic River drainage (EX 1, MR 193, NJ-456), each with a fluted point, "and small amounts of waste flakes, reflecting specialized tool making and hunting loci."[18]

Beginning around 9700 BCE, the Holocene Epoch brought in the temperate climate we experience today in the Mid-Atlantic region. By about 3000 BCE, the rising Atlantic Ocean waters inundated the lower Hudson, Delaware, and Susquehanna rivers, forming the estuarine bays known today as the Hudson Bay, Delaware Bay, and Chesapeake Bay and their adjoining tidewater environments defined as the Coastal Plain. Above the fall line, the point at which the relatively flat Coastal Plain ends and the land begins to rise, the hills and valleys of the freshwater Piedmont stretch toward the Allegheny Mountains.[19]

The Archaic Period (Early—8000 to 6500 BCE; Middle—6500 to 4000 BCE; Late—4000 to 2000 BCE; Terminal—2000 to 1000 BCE) is marked by new adaptations to the environmental changes associated with the Holocene Epoch. After the glaciers receded sufficiently far north that they no longer influenced the environment of the Mid-Atlantic, a period of warmer temperatures accompanied by a wetter climate altered the landscape. The open grasslands favored by large grazing animals such as bison and moose gave way to deciduous forests, home to elk, deer, and other smaller animals.[20] The appearance of relatively small, bifurcate (stemmed with a bottom notch) spear points, possibly associated with the development of the atlatl or spear-thrower, were more effective with smaller, faster game. Heavy ground-stone tools appear in Middle to Late Archaic Period assemblages which reflect the increasingly resource-rich deciduous environment. Axes and adzes were woodworking tools; grinding stones (mullers) and mortar and pestles served to process a variety of plants and possibly nuts.[21] Netsinkers and the occasional harpoon point indicate a growing technology around fishing; however, New Jersey archeologist Herbert Kraft cautions that "little direct evidence for Archaic fishing practices" in the Mid-Atlantic region has been found.[22]

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[17] Pagoulatos, "Paleoindian Site Location in New Jersey," 123.

[18] Pagoulatos, "Paleoindian Site Location in New Jersey," 130.

[19] Richard J. Dent, Jr., *Chesapeake Prehistory: Old Traditions, New Directions* (New York: Plenum Press, 1995), 5; Kraft, *The Lenape-Delaware Indian Heritage,* 90.

[20] Kraft, *The Lenape-Delaware Indian Heritage,* 92.

[21] AECOM, "Native American Context," *Digging I95,* November 3, 2014, http://diggingi95.com/project-information/prehistoric-context/, accessed 8/30/2016; Kraft, *The Lenape-Delaware Indian Heritage,* 106–107, 111–112.

[22] Kraft, *The Lenape-Delaware Indian Heritage,* 128. The V-shaped, stone fish weirs along the Passaic River are not currently definitively dated and many archeologists, including Kraft (citing Robert E. Funk), caution that "they may have been used by historic Euroamericans to lift boats over rapids." (Kraft, *The Lenape-Delaware Indian Heritage,* 129)

The addition of the less-portable ground stone tools is indicative of a somewhat more settled lifeway made possible by improved environmental conditions. Archaic Period base camp sites in the Mid-Atlantic indicate larger groups than the Paleo-Indian encampments. These larger sites are found in floodplain settings along the larger rivers. Smaller, hunting and plant gathering sites are found outward from the primary camps, following the seasonal cycles within territories.[23] Five Archaic Period sites are clustered in the northeast New Jersey region around the Passaic River: Towaco/Two Bridges, Pine Brook, Singac, Totowa, and Pompton Lakes.[24] The Schondorf Collection at the Paterson Museum includes projectile points dating from the Archaic Period, with the bulk of the points associated with Late Archaic occupations.

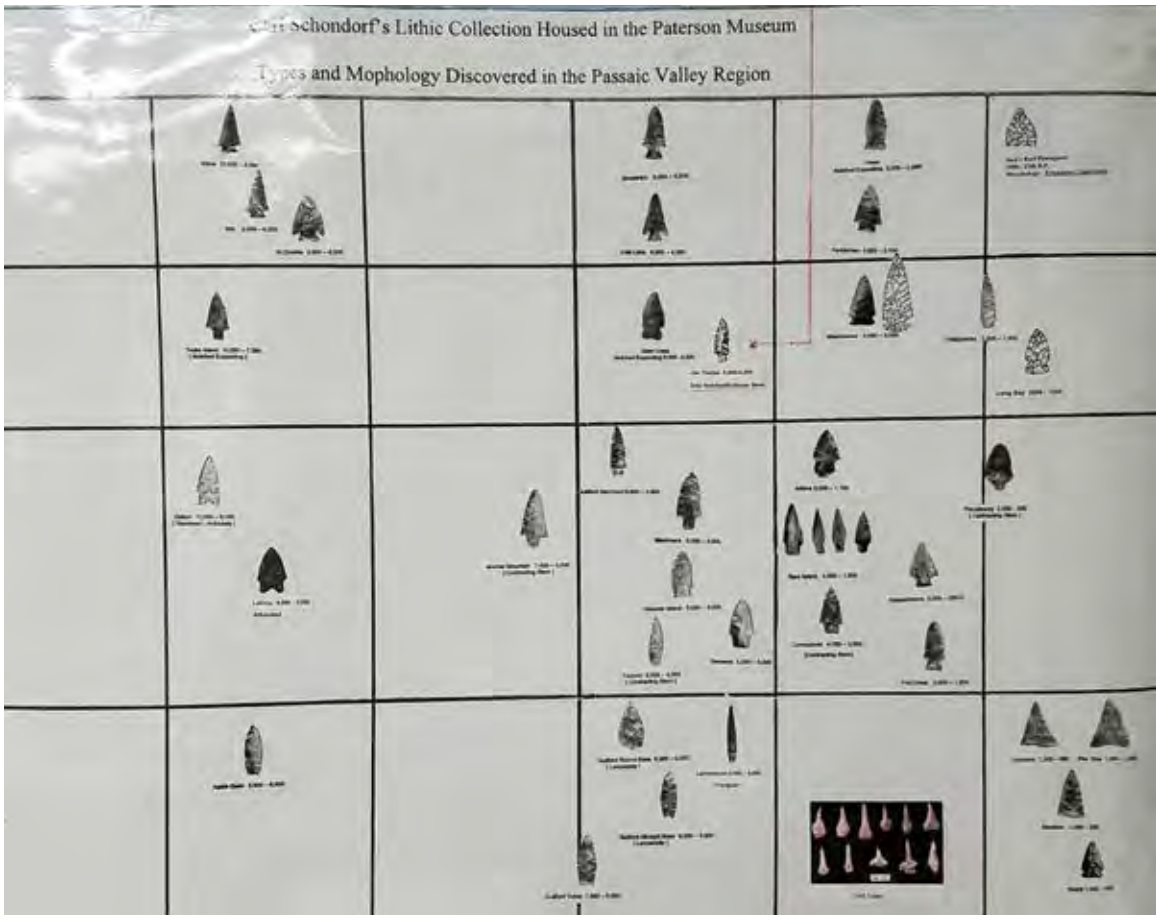

Figure 6: Carl Schondorf's lithic collection chart. (Paterson Museum)

[23] Custer, Prehistoric Cultures, 129–137; Kraft, *The Lenape-Delaware Indian Heritage*, 111; see also Kraft, in Olga Chesler, ed., *New Jersey's Archeological Resources* (New Jersey Dept. of Environmental Protection, Historic Preservation Office, 1982), 61.

[24] Kraft, *The Lenape-Delaware Indian Heritage*, Figure 4.2, 91. Kraft notes in Chesler (page 62) that the Pine Brook site (O'Dowd Farm Site) was surface collected, but "no scientific archeological excavations have ever been conducted in this area."

The Woodland Period (Early—1000 BCE to 0; Middle—CE 1 to 1000; Late—CE 1000 to 1650) marks the shift to a broad range of subsistence strategies in the Mid-Atlantic region. In general, settlement patterns change only slightly with continued use of high productivity areas (floodplains and marsh/swamps) for extended occupations. However, over much of the region there is evidence during the later period of increased sedentism associated with the development of agriculture. While some Terminal Archaic Period (2000-1000 BCE) sites included steatite (soapstone) bowls or cooking vessels, ceramics proliferated during the Woodland Period and took on regional identities. The small triangular points associated particularly with the bow and arrow became nearly exclusive in hunting toolkits during the Late Woodland Period.[25]

The Piedmont landscape of the Mid-Atlantic through the Woodland Period was covered with dense deciduous forests, dominated by the American chestnut and varieties of oak. Nuts, berries, and foliage in the undergrowth provided food for turkey, deer, elk, bear, squirrels, beaver, and other small animals.[26] The forests were broken by swift-flowing creeks and rivers, tributaries of the larger rivers bound for the tidal bays. Freshwater creeks and rivers teemed with fish throughout the year, joined by the annual spawning runs of anadromous fish. This was an environment fully suited to a seasonal hunting and gathering lifeway, but was equally suited to agricultural adaptations, allowing for longer stays at summer basecamps.

In his 1913 official report, Schrabisch identified twenty-five sites in and around Paterson. Though not specifically identified with a cultural period, it is likely these sites had Woodland components:

> Four sites have been found on the west side of the city, called Totowa, on the flats extending north of the river to the foot of Totowa Hill.
>
> There was a site at the Falls, another on Paterson Island and a ford [or fish weir] crossed the river below Main Street Bridge.
>
> Along the northernmost course of the river there occur the following: a camp on Bunker Hill, a ford north of it two fords between Wagaraw and Fifth Avenue Bridges.
>
> There are twelve camp sites and one ford between Broadway and Wesel Bridges along the west bank of the river. All the sites given under the side heads of Singac, Little Falls and Paterson are in Passaic County.[27]

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[25] Dent, Chesapeake Prehistory, 226–227; Kraft, *The Lenape-Delaware Indian Heritage,* 137, 184, 205–206.

[26] Kraft, *The Lenape-Delaware Indian Heritage,* 209.

[27] Schrabisch, *Bulletin 9,* 76–77. Though none of these sites are identified with a particular cultural period by Schrabisch, it is likely that most of the surface or near-surface components are Woodland Period. It is also possible that Archaic, and possibly Paleo-Indian layers were buried below but not investigated.

Three rock shelters were located on Garret Mountain: "at the northern extremity of Garret Mountain, one of these is at the foot of Garret Rock, the others on the eastern slope of the mountain, on Catholina Lambert's estate, South Paterson."[28]

Schrabisch's notation of five "fords or weirs" in his 1913 report is a reference to the stone V-shaped structures which crossed the Passaic River at various points. He described them as "evidence of the Indian's activity."[29] The editor of the report, State Geologist Henry B. Kümmel, added this caution in a footnote: "The fact that many similar rock fords and weirs have been constructed by white men must not be overlooked. The mere occurrence of V-shaped lines of rock in streams cannot be regarded as proof of Indian workmanship without some independent evidence which shall differentiate them from those of the white man. —H. B. K."[30] In 1924, a projectile point and two knife fragments were discovered on the north side (Fair View) of the river, "opposite the foot of 3rd Ave.," near one of the V-shaped structures, providing some evidence that the structure may indeed have been constructed and used by Woodland or Lenape bands.[31]

The lack of direct evidence for pre-European Contact occupations in the area of the Great Falls and the City of Paterson is likely because of the extensive industrial development along the river, without prior archeological investigation, where sites were likely to be located. Schrabisch wrote in 1913:

> There is no doubt that the territory now occupied by the City of Paterson was once a favorite resort of the Indian, and this assumption is amply borne out by the traces of prehistoric activity discernible to this day. Again, it is certain that in the course of building operations many sites, including even rock shelters, have forever been obliterated.[32]

The presumed destruction of archeological sites in and around Paterson is a setback for the understanding of pre-contact occupations in the area. However, the study of datable projectile points within the collections of Schrabisch and Schondorf provide evidence for predictive modeling of Early/Middle Woodland sites within the Passaic River Valley:

> Kinsey (1972: 368) has noted the similarity of the ceramics of the Bushkill Complex to those of coastal New York, where Rossville points also occur. A typological analysis of projectile points recovered from surface surveys in the intervening area of the Passaic River Basin (Williams et al. 1978) indicates the continuous distribution of Rossville points, with greatest concentration in the

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[28] Schrabisch, *Bulletin 9*, 79.

[29] Schrabisch, *Bulletin 9*, 37. Schrabisch actually identified sixteen of these structures in the Passaic, but five were located within the Paterson city limits.

[30] Schrabisch, *Bulletin 9*, 37, n. 1.

[31] Kevin Coyne, "Pursuing a Secret of the Passaic," *The New York Times*, October 3, 2008, https://www.nytimes.com/2008/10/05/nyregion/new-jersey/05colnj.html, accessed 1/8/2019.

[32] Schrabisch, *Bulletin 9*, 76.

> Piedmont zone. Contemporaneous sites should occur in the Passaic Basin and, given the variety of natural habitats within the basin, a range of kinds of occupation sites may well be found.[33]

In fact, the Schondorf Collection at the Paterson Museum includes diagnostic points and ceramics dating from the Early Woodland through the Late Woodland periods, though their lack of archeological context precludes making specific assumptions about potential sites.

Over his several decades of investigation in the early twentieth century, Max Schrabisch observed a large number of sites within the Passaic Valley. In a 1929 article, he noted "no less than 200 Indian lodge or camp sites along with six large settlements or villages, scattered thru Passaic River Valley from Horseneck Bridge to Passaic."[34] Among those, Schrabisch located eighty sites "within or very near the boundaries of Paterson," again adding in reference to the later riverside development of Paterson, "there is no way of telling as to how many have been blotted out…"[35]

Lenape of the Mid-Atlantic, CE 1600 to 1650

New Jersey archeologist Herbert Kraft uses the name *Lenapehoking,* meaning "Land of the Lenape," to describe the region occupied by Lenape bands at the time of European contact. It is not a historic term, but rather a descriptive term given to Kraft by Delaware Tribe member and Lenape linguist, Nora Thompson Dean in 1984.[36] In his exhaustive study, *The Lenape-Delaware Indian Heritage: 10,000 BC to AD 2000,* Kraft states that from the beginning of the Late Woodland Period (about CE 1000), "Lenapehoking was inhabited by people that we can confidently identify as Lenape Indians."[37] By the time of European contact after CE 1600, Lenape bands spoke at least two regional dialects: Munsee, north of the Raritan River and Unami, to the south as far as Delaware.[38]

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[33] Lorraine E. Williams and Ronald A. Thomas, in Chesler, ed., *New Jersey's Archeological Resources,* 115. The citations in the quote reference W. Fred Kinsey, III, et al. *Archaeology in the Upper Delaware Valley* (Harrisburg: Pennsylvania Historical and Museum Commission, 1972) and Lorraine E. Williams, Edward S. Rutsch, and Karen A. Flinn, *Cultural Resources Sensitivity Analysis of the Passaic River Basin,* report submitted to the U.S. Army Corps of Engineers, New York District, New York, 1978.

[34] Max Schrabisch, "Aboriginal Vestiges of Garret Mountain," *The Passaic County Historical Society,* Vol. 1, No. 3, Sept. 1, 1929, 7, 9. Garret Mountain is also sometimes called Garret Rock.

[35] Schrabisch, "Aboriginal Vestiges of Garret Mountain," 8.

[36] Kraft, *The Lenape-Delaware Indian Heritage,* 9, n. 2.

[37] Kraft, *The Lenape-Delaware Indian Heritage,* 205. Kraft also emphatically notes that he believes the Lenape "likely developed *in situ* from predecessors already there in Early and Middle Woodland times."

[38] Kraft, *The Lenape-Delaware Indian Heritage,* 206. Some linguists also divide the Unami dialect into Northern Unami and Southern Unami. (Kraft, 206)

The Lenape groups which lived along the eastern seaboard (southeastern New York, New Jersey, Pennsylvania east of the Susquehanna, eastern Maryland, and Delaware) are today known largely by the descriptions from sixteenth and seventeenth century European explorers, traders, and missionaries and from Lenape stories which recall traditional lifeways.[39] Review of the available literature describing the Lenape at the time of European contact reveals a system of community subsistence which generally matches the patterns described in the archeological record.

University of Pennsylvania anthropologist Anthony F. C. Wallace estimated approximately eight thousand Lenape lived in the region before European contact (around CE 1600), that number gleaned from a review of contact period literature.[40] Robert Evelyn, an English traveler in 1634, described twenty-two villages along the eastern drainages of the then-South (Delaware) River and western North (Hudson) River (later New Jersey) with anywhere from fourteen to six hundred men. From this, Herbert Kraft estimates band or village sizes ranging from as little as forty to more than 1,800 inhabitants.[41] A gathering of several family lineages formed the village bands, with each lineage numbering as many as fifty men, women, and children.[42]

Lenape family lineages traced through the maternal line. The matrilineage, notes Kraft, "consisted of a female matron (a grandmother or eldest woman) and her male and female descendants and collateral relatives in the female line."[43] Though bands generally governed themselves by consensus, "the matriarch in consultation with other women of the lineage," would choose a male *sakima* or "sachem" to serve as mediator or spokesman for the family when the need arose. Kraft notes that, "The sakima was not exalted; in most instances he was regarded merely as the first among equals."[44] Europeans mistakenly identified these village bands as "nations" and often called the chief *sakima* "king." In reality, the *sakima* could make no decisions on his own and only carried out the directions of his council of "wise men."[45] It was these village-band "nations" with whom the Dutch traders, and later English proprietors, negotiated for trade and land.

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[39] John R. Norwood, We Are Still Here! The Tribal Saga of New Jersey's Nanticoke and Lenape Indians (Moorestown: Native New Jersey Publications, 2007), 10–12; Hitakonanu'laxk (Tree Beard), Grandfathers Speak: Native American Folk Tales of the Lenape People (New York: Interlink Books, 1994), 9–16.

[40] Anthony F. C. Wallace, *King of the Delawares: Teedyuscung 1700–1763* (Philadelphia: University of Pennsylvania Press, 1949), 7–8. The name "Delaware" for the Lenape was given by English explorers who named the Delaware Bay for Virginia governor Lord De La Warr and applied the title to the occupants of the Lenapewihittuck (Delaware River) drainage.

[41] Kraft, *The Lenape-Delaware Indian Heritage,* 218–219. These numbers are based on each male having a wife and at least one child.

[42] Wallace, *King of the Delawares,* 8–9.

[43] Kraft, *The Lenape-Delaware Indian Heritage,* 249.

[44] Kraft, *The Lenape-Delaware Indian Heritage,* 250.

[45] Kraft, *The Lenape-Delaware Indian Heritage,* 250.

Descriptions of the Lenape living along the Mid-Atlantic coast written by European explorers and missionaries are most certainly colored by their belief in European and Christian superiority. However, the accounts provide us with a window on traditional Lenape lifeways. Though none directly reference bands living in what would later be the Paterson area of northern New Jersey, it is likely Lenape living along the Hudson River would have similar lifeways. In the reports of Italian explorer Giovanni da Verrazano in 1524, the peoples he encountered were still living within the Late Woodland chronological period, most yet unaltered by European trade goods and diseases.[46] Verrazano's explorations began on the Carolina coast. Sailing north, he briefly stopped on the Delmarva Peninsula and came finally to the New York Bay, "a very agreeable place between two small but prominent hills; between them a very wide river, deep at its mouth, flowed out into the sea."[47] Calling the land *Angoleme* and the bay *Santa Margarita,* Verrazano described the area as "densely populated."

> The people were almost the same as the others, dressed in birds' feathers of various colors, and they came toward us joyfully, uttering loud cries of wonderment, and showing us the safest place to beach the boat. We went up this river [Hudson] for about half a league, where we saw that it formed a beautiful lake [Upper Bay], about three leagues in circumference. About XXX [thirty] of their small boats ran to and fro across the lake with innumerable people aboard who were crossing from one side to the other to see us.[48]

Unable to continue their explorations there due to storms, the ship continued farther north.

Eighty-five years later, Henry Hudson's 1609 exploration traced the North (Hudson) River (as relayed by Joannes De Laet in 1625 and later editions) and he described the people he found along the way. At Latitude 42° 18' (near today's Catskill, NY), Hudson visited a native family group:

> I sailed to the shore in one of their canoes, with an old man, who was the chief of a tribe, consisting of forty men and seventeen women; these I saw there in a house well constructed of oak bark, and circular in shape, with the appearance of having a vaulted ceiling. It contained a great quantity of maize, and beans of the last year's growth, and there lay near the house for the purpose of drying enough to load three ships, besides what was growing in the fields. On our coming near the house, two mats were spread out to sit upon, and immediately

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[46] Verrazano's exploration was paid for by the King of France. He was looking for the passage to Cathay but instead found the unbroken east coast of North America. First landing at South Carolina, he turned north to avoid running into the Spanish, stopping on the Outer Banks of North Carolina, on the Delmarva Peninsula, New York, Rhode Island, and as far north as Newfoundland.

[47] "Giovanni da Verrazzano, Letter to King Francis 1 of France, 8 July 1524," National Humanities Center, 2006, http://nationalhumanitiescenter.org/pds/amerbegin/contact/text4/verrazzano.pdf, 4–5.

[48] Verrazzano Letter, 5.

> some food was served in well made red wooden bowls; two men were also despatched at once with bows and arrows in quest of game, who soon after brought in a pair of pigeons which they had just shot.[49]

One of the ship's officers, Robert Juet, reported trading with the natives for oysters, beans, "Indian Corne, Pompions, and Tabacco."[50] Juet observed, "The river is full of fish," while Hudson reported catching salmon and sturgeon in the river.[51]

In 1625, Joannes De Laet described "The Manners and Customs of the Natives of New-Netherland," focusing on the "Sankikans" of the Upper South (Delaware) River (the boundary between today's Pennsylvania and northwestern New Jersey):

> Their clothing is composed of the skins of wild animals, especially beavers, foxes, and the like, sewed together in the manner of savages, with which they cover themselves entirely in winter, and slightly in summer. Their food principally consists of maize or Indian corn, from which they bake cakes resembling loaves of bread; fish, birds, and wild game. Their weapons are bows and arrows, the latter pointed with sharp flint stones or the bones of fishes. Their boats are one piece of wood, hollowed out by fire from the solid trunks of trees. Some of them lead a wandering life in the open air with no settled habitations; lying stretched upon the ground or on mats made of bulrushes, they take both their sleep and food, especially in summer, when they go nearer to the sea for the sake of fishing. Others have fixed places of abode, and dwellings built with beams in the form of an oven, covered above with the bark of trees, so large that they are sufficient for several families. Their household furniture is slight and scanty, consisting of mats and wooden dishes, hatchets made of hard flint stone by dint of savage labor, and tubes for smoking tobacco formed likewise of flint stone ingeniously perforated, so that it is surprising how, in so great a want of iron implements, they are able to carve the stone. They neither desire nor know riches.[52]

The Sankikans lived just west of the bands living within the Passaic River drainage.

By the time of these early contacts, Lenape bands already appear to have adopted distinguishing group identities. Joannes De Laet, who drew upon the records of several early explorers, described several bands or tribes living along the North or Great (Hudson) River in his 1625 and 1630 editions of the *Narratives of New Netherland.* On the east side of the river (from south to north) lived the Manhattes (Manhattans), Pachami, Waoranecks, and Mohicans, and on the west side (south to north), the Aquamachuques, Sanhikans,

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[49] J. Franklin Jameson, ed., *Original Narratives of Early American History, Narratives of New Netherland, 1609–1664* (New York: Charles Scribner's Sons, 1909), 45, https://books.google.com.

[50] Jameson, *Narratives of New Netherland,* 20–21.

[51] Jameson, *Narratives of New Netherland,* 21, 49.

[52] Jameson, *Narratives of New Netherland,* 57.

Machkentiwomi, Tappaans, Waranawankougs, and Mackwaes (Mohawks).[53] New Jersey archeologist Herbert Kraft added to this list bands living north of the Raritan: the Canarsee, Esopus, Hackensack, Haverstraw, Kitchtawank, Massapequa, Matineconck, Navasink, Nochpeem, Raritan, Rechgawawank, Rockaway, Sinisink, Siwanoy, Tankitekes, Wappinger, and Wiechquaeskeck.[54] According to Kraft, these groups represent some of the familial bands which occupied and utilized the resources within geographical areas generally focused around one of the Hudson drainages.

[53] Jameson, *Narratives of New Netherland,* 45–47.

[54] Kraft, *The Lenape-Delaware Indian Heritage*, 4. The Lenape bands living north of the Raritan River spoke the Munsee dialect and are often referred to as "Munsee" or "Minsi" (Kraft, *The Lenape-Delaware Indian Heritage*, 5); see also 1758 Treaty of Easton in which the northern New Jersey tribes (except the "Wapings"), by then living in the Wyoming Valley of the Susquehanna in Pennsylvania were apparently lumped together as the "Minsinks."

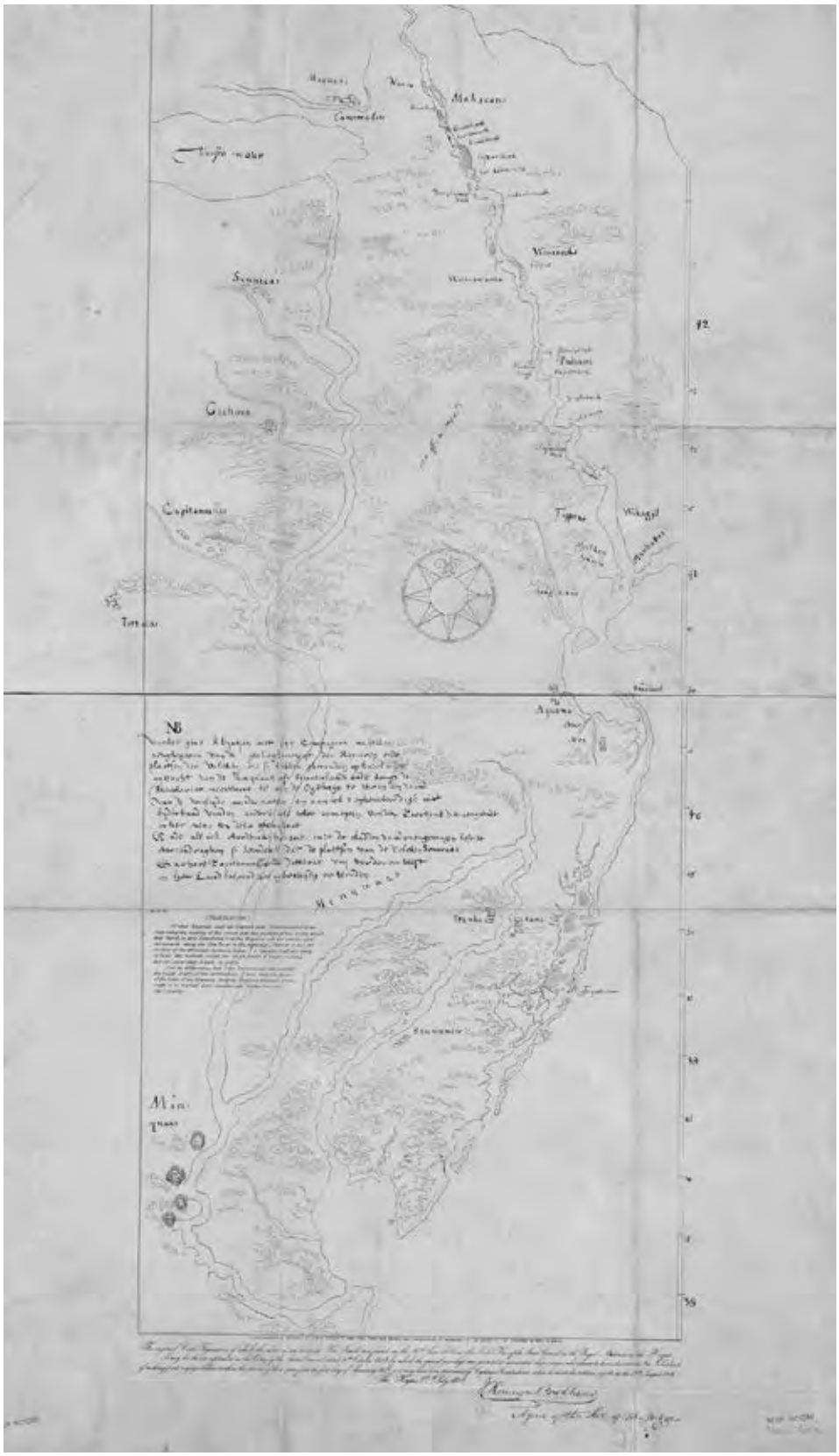

Figure 7: 1616 Cornelius Hendricksen map of New Netherland, redrawn by John Brodhead in 1841. (New York Public Library)

Lenape of the Passaic Valley

Seventeenth century maps and journals indicate that at least three bands occupied territories in the Hackensack and Passaic River valleys. According to historian E. M. Ruttenber's 1878 *History of the Indian Tribes of the Hudson River,* the *Tappan* lived between the Hudson River and the Hackensack River, from approximately Weehawken northward. In 1640, David Peiter de Vries purchased 500 acres from the *Tappan,* located "within an hour's walk of *Gamoenapa,*" the "council fire" village of the *Hackinsack (Ack-kin-kas-hacky)*.[55] The Hackinsack territory "embraced the valley of the Hackinsack and Passaic Rivers," including Jersey City (*Gemoenapa* or Communipaw), "Hoboken, a part of Staten Island, Wehawken, Newark, Passaic, etc."[56] Adjoining the Hackinsack along the Passaic River was the *Acquackanonk* territory, including the area now encompassed by the city of Paterson and "a considerable portion of the centre of New Jersey."[57] Robert S. Grumet interprets the *Gweghkongh* and *Hweghkong,* whose sachems were among the signers of a deed for Staten Island land in 1657, as another spelling for the Acquackanonk. In the deed, thirteen sachems and representatives from the Tappaan [sic], Hespatingh, Hackingsack [sic], Gweghkongh, and Hweghkong, described as the "hereditary owners of Staten Island," conveyed "the whole of Staten Island, by us called Eghquaons," in exchange for clothing, cloth, kettles, tools, as well as ten muskets, powder, and lead.[58] This deed implies a close kinship among these lower Hudson River Lenape groups.

Ruttenber's 1906 publication, *Footprints of the Redmen: Indian Geographical Names in the Valley of Hudson's River,* provided his interpretation of the place-name *Acquackanonk:* "Aquackanonck, Aquenonga, Aquainnuck, etc., is probably from Achquani'kan-ong," meaning "Bushnet fishing place." Ruttenber referenced David Zeisberger, a Morvarian missionary among the Munsee Lenape in the eighteenth century, who translated *"Achquanican"* as "a fish dam." The addition of *unk* or *ong,* according to

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[55] Ruttenber, *History of the Indian Tribes,* 90–91. De Vries established his home plantation called Vriessendael on this land. Today the land is part of the Edgewater community.

[56] Ruttenber, *History of the Indian Tribes,* 90–91.

[57] Ruttenber, *History of the Indian Tribes,* 91, 376. The "centre of New Jersey" perhaps meaning north-central New Jersey, likely not as far south as the Raritan River, which was the territory of as many as twenty Raritan bands. (Ibid, 90)

[58] "Indian Deed for Staten Island," Gehring, *New Netherland Correspondence,* 2003, 141.

Ruttenber, indicates a geographic location, which he identified as "a point of land formed by a bend in Pasaeck River on the east side, now included in the City of Paterson."[59]

Jasper Danckaerts' 1680 description of the river just below the Great Falls of the Passaic appears to support the "fish dam" interpretation of the Munsee word:

> When the fish come up the river, this basin is so full of all kinds of them, that you can catch them with your hands, because they are stopped there, and collect together, refreshing themselves, and sporting in and under the falling fresh water, which brings with it, from above, bushes, green leaves, earth, and mire, in which they find food.... The Indians come up this river in canoes to fish, because it is one of the richest fisheries they have...[60]

Danckaerts described a tract called "Ackquekenon," encompassing "about twelve thousand *morgen* [24,000 acres]," located, at least in part, between the "Northwest Kil" (Passaic River) and "a small creek," probably the Saddle River.[61]

According to John Heckewelder, the Lenape called the winding river emanating from the Watchung Mountains *Pasaiek*, meaning "a valley."[62] Heckewelder additionally observed, "It does not seem that the Indians noted the falls in this river; but merely the ground through which the stream passeth."[63] However, a map of the Eastern and Western Jersey colonies, drawn by William Thornton and published in 1706, shows the "Paquam Falls" on the "Pisaick." Historian Edward M. Ruttenber, writing in 1872, interpreted *Totama* as "the name of the falls—a word signifying to sink, to be forced down under weight by water."[64] Raymond Whritenour, a modern scholar of the Lenape Munsee and

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[59] E. M. Ruttenber, *Footprints of the Red Men: Indian Geographical Names in the Valley of Hudson's River*, in Proceedings of the New York State Historical Association, Seventh Annual Meeting (New York State Historical Association, 1906), 104, https://archive.org, accessed 1/31/2019. Robert Grumet offers these alternate interpretations: "Heckewelder (1834, 376) thought that Acquackanonk sounded much like a Delaware Indian word, tachquahacannéna, referring to a place where people made pounding blocks from tachquahcaniminschi, 'gum trees.' Brinton and Anthony (1888, 11) suggested another Delaware etymology; achquanican, 'fish dam.' Whritenour thinks that Acquackanonk sounds almost exactly like a Munsee word, *axkwaakahnung, 'at the stream of lampreys.'" (Grumet, "Beyond Manhattan," 41)

[60] Bartlett Burleigh James and J. Franklin Jameson, eds, *Journal of Jasper Danckaerts 1679–1680* (New York: Charles Scribner's Sons, 1913), 177.

[61] James and Jameson, *Journal of Jasper Danckaerts*, 175. A 1686 survey of 4,000 acres of the "Acquikanunck" tract was described "between Pissaick and Sadle River." (NJ Archives, "Early Land Records, 1650–1801, Book B, page 122). See section below, *Extension of Settlements into the Passaic Valley*, for a full description of the Acquackanonk tract.

[62] Heckewelder and Du Ponceau, ed., "Names," 375. Heckewelder did not address the name "Watchung." Given in Ruttenber, citing Zeisberger, "is from *Wachtschu*, "Hill or mountain," and *-unk*, locative 'at' or 'on.'" (Ruttenber, "Footprints of the Red Men," 104)

[63] Heckewelder and Du Ponceau, "Names," 375.

[64] Ruttenber, *History of the Indian Tribes*, 376–377.

Northern Unami dialects, identifies *Paquapik* as the likely Lenape name for the falls, meaning "the noisy water."[65]

Figure 8: 1706, John Thornton, A New Map of East and West New Jarsey. (Library of Congress)

There are no period descriptions of the *Acquackanonk* band living along the Passaic River at the time of European contact. Additionally, much of the archeological evidence was damaged or destroyed by development, beginning with the 1791 raceway construction by the Society for Establishing Useful Manufactures. Max Schrabisch, who conducted archeological surveys of the area in the first decades of the twentieth century, described what he inferred from his survey:

> Many a fishing place and camp site lined this once beautiful stream and the country through which it flows supported at one time a comparatively dense Indian population, for the river abounded in fish and the forest in game. That

[65] Raymond Whritenour, personal communication, 12/17/2018; see also "sschkaak" (R. Whritenour), moderator, "Indian placenames in and around Paterson, NJ," *Woodland Indians Forum*, http://www.woodlandindians.org/forums/viewtopic.php?id=3749, accessed 12/17/2018.

> this region was the scene of busy life may be inferred from the fact that an important trail, the Wagaraw trail, traversed it on the Bergen County side of the river, connecting with the Goffle and Totowa trails at the northernmost point and bend of the river. The former ran north to Sicoraac and Franklin Lake, the latter in a southwesterly direction to Totowa and thence to Singac, closely following the meanderings of Passaic River. Again, there are many indications of primitive workshops along its banks and here the surface soil is even now littered with raw material and flakes. Flint, quartz and jasper were the materials most highly prized and they were almost exclusively employed by the later or so-called modern Indians.[66]

Schrabisch indicated there were as many as sixteen fish weirs across the river between Passaic Park and Two Bridges. Only two are identifiable in the river today (2019) and archeologists remain uncertain as to whether the weirs were Lenape or European in origin.[67]

Schrabisch recorded as many as eighty sites "within or very near the boundaries of Paterson."[68] Noting that the apparent large number of sites gave "the impression of a large population," he observed instead that,

> these sites are attributable to a very thin population, amounting probably to no more than a few hundred individuals, who, true to their nomadic proclivities and the exigencies of a precarious existence, were frequently shifting about within their allotted district, even as their forebears had done for countless centuries.… they subsisted largely on fishing and hunting. That they had made some progress in the arts of husbandry is evinced by the discovery of such tools as stone hoes, pestles and mortars. The vegetables, most often raised, were maize, beans and squashes.[69]

Schrabisch identified the Fairfield area as the likely location where "the Acquackanoncks had their Winter quarters," citing its situation sheltered by Hook (Towaco) Mountain and the "innumerable artifacts… bespeaking an intense occupation in scores of camps and village sites…"[70]

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[66] Max Schrabisch, in Alanson Skinner and Max Schrabisch, *Bulletin 9: A Preliminary Report of the Archaeological Survey of the State of New Jersey made by the Department of Anthropology in the American Museum of Natural History, Geological Survey of New Jersey* (Trenton: MacCrellish & Quigley, 1913), 37.

[67] "The Fair Lawn/Paterson fish weir (New Jersey State Museum #28-Be-176/28-Pa-147) spans the Passaic River approximately 180 meters (200 yards) north of the Fair Lawn Avenue bridge, straddling the Borough of Fair Lawn (in Bergen County) and the City of Paterson (in Passaic County), in New Jersey. It consists of a "V"-shaped wall of river cobbles and boulders, with its point oriented downstream. The structure spans the entire width of the Passaic River, which at that point is approximately 80 meters (260 feet) wide." (Allen Lutins and Anthony P. DeCondo, "The Fair Lawn/Paterson Fish Weir," *Bulletin of the Archaeological Society of New Jersey*, Vol. 54, 1999, www.lutins.org/weir/, accessed 2/1/2019.

[68] Schrabisch, *Bulletin 9*, 8.

[69] Schrabisch, *Bulletin 9*, 14.

[70] Schrabisch, *Bulletin 9*, 14.

European "Discovery" and the New Netherland Claim

As early as 1497, Italian explorer Giovanni Caboto, better known as John Cabot, sailed across the Atlantic under the British flag. He sought a northern passage to Asia, but instead he found Newfoundland. Cabot claimed the land he "discovered" for England.[71] In 1498, Cabot's second trans-Atlantic voyage, largely undocumented, may have turned southward along the eastern coastline of North America, possibly as far south as the Chesapeake Bay, extending the British claim.[72] Giovanni da Verazanno followed Cabot in 1524, who made his voyage of "discovery" under the French flag. Another French explorer, Jacques Cartier, claimed Canada for France in 1535 after charting the St. Lawrence River.[73]

Before these journeys, European powerhouses Spain and Portugal dominated New World explorations. However, the balance of power in Western Europe would soon undergo dramatic changes. In 1568, the seventeen Dutch provinces rebelled against the rule of Spain's King Philip II. By 1581, the northern seven provinces, predominantly Protestant and led by William of Orange, declared their independence as the Republic of the Seven United Netherlands. During the bloody war, Spanish troops sacked the merchant center at Antwerp, initiating a mass immigration to the northern port city of Amsterdam and establishing it as the new merchant center of Europe.[74] At the same time, Spain's King Philip II inherited the crown of Portugal, effectively combining the two rival nations. Philip's war against England, begun in 1587, was dealt a significant loss in 1588 when Spain's Armada of ships, bound for an invasion of the British island, was defeated by the British Navy and their Dutch allies off the coast of France. Each of these profound events set the stage for a new period of exploration and settlement in North America, dominated by the English, French, and Dutch.

In 1584, England's Queen Elizabeth began the process of establishing British sovereignty in North America, based upon Cabot's claims of "discovery," by issuing a charter to Sir Walter Raleigh. It authorized him to explore and occupy land "not actually possessed of any Christian Prince, nor inhabited by Christian People…" effectively allowing him to colonize land already occupied by Native Americans.[75] Raleigh was given seven years to establish a colony on his proprietary land in exchange for one-fifth of all the gold and silver discovered there. His Roanoke Colony, located on the island between today's

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[71] European countries used the "right of discovery" to claim lands on the American continent. However, since the American continent was already occupied by a significant number of native people, the idea that Europeans "discovered" the continent or had a right to claim it is no longer accepted.

[72] David Arnold, *The Age of Discovery 1400–1600*, Second Edition (New York: Routledge, 1994), 18.

[73] Arnold, *The Age of Discovery*, 16.

[74] "Timeline Dutch History," *Rijks Museum*, www.rijksmuseum.nl/en/rijksstudio/timeline-dutch-history, accessed 1/30/2019; The Republic of the United Netherlands was officially recognized in 1648.

[75] "Charter to Sir Walter Raleigh: 1584," *The Avalon Project*, Yale Law School Lillian Goldman Law Library, http://avalon.law.yale.edu/16th_century/raleigh.asp, accessed 2/15/2017.

North Carolina mainland and the Outer Banks, failed after several attempts. The colony's occupants (or their remains) were never found and it became known as the Lost Colony. It would be more than a decade before another attempt was made by the English to colonize North America, largely owing to its ongoing war with Spain.

England returned to the Mid-Atlantic territory they called Virginia after 1606 when the Virginia Company of London received a royal charter to establish a new colony. The charter's boundary stretched between the 34th and 41st parallels—from today's southern South Carolina border to the northern border of New Jersey—where they could "place theire plantacions and habitacions."[76] An overlapping charter was given the same year to the Plymouth Company, whose territory stretched from the 38th to the 45th parallel. This so-called "Seconde Colonie" landed a settlement at the mouth of the Kennebec River in Maine in 1607, but was abandoned in 1608. In May 1607, three Virginia Company ships carrying 104 settlers, among them Captain John Smith, landed at the mouth of the James River and established the Jamestown colony. Under the guidance of John Smith—who became the colony's third leader in 1608—the struggling settlement began to stabilize, producing glass, potash, and after 1612, tobacco for trade.[77]

Dutch explorations reached the New World two years after Jamestown was settled. Sailing under the Dutch flag, Henry Hudson navigated to the bodies of water later named for him, the North (Hudson) Bay and North (Hudson) River. Hudson claimed the North River drainage, including parts of what is now Connecticut, New York, and New Jersey, for the Dutch East India Company in 1611, despite the British royal charter for the same territory issued to the Plymouth Company in 1606.[78]

The Dutch returned several years later when Cornelius Hendricksen sailed into the South (Delaware) Bay in 1616. By then the English settlement in Virginia had already logged nearly a decade of struggle and fitful progress. Hudson and Hendricksen's explorations of the North and South Rivers formed the premise for the Dutch claim to their "right of discovery" of the territory they called New Netherland. As previously noted, this claim ignored the prior British claim via Cabot's 1497 explorations, as well as the 1606 royal charters given to the Plymouth and Virginia Companies, and the permanent settlement at Jamestown. Britain reportedly protested the Dutch claim at The Hague, though apparently to no avail.[79]

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[76] "Boundaries and Charters of Virginia," *Virginia Places,* www.virginiaplaces.org/boundaries/charters.html, accessed 1/30/2019.

[77] "John Rolfe," *Jamestown Rediscovered,* http://historicjamestowne.org/history/pocahontas/john-rolfe/, accessed 2/15/2017.

[78] B. Fernow, *Documents Relating to the History of the Dutch and Swedish Settlements on the Delaware River* (Albany: The Argus Company, 1877), Vol. VII, iv. Hudson's New Netherland claim also included the north South Bay and South River (later called the Delaware Bay and River) drainages, overlapping the British Jamestown claim.

[79] Fernow, *Documents,* iv.

Dutch Contact with the North River Lenape

For the Dutch, the primary purpose of their New Netherland territory was to develop a trans-Atlantic fur trade. Immediately after Hudson's visit in 1611, and before the Dutch East India Trading Company established a presence there, independent Dutch operators began trading with the Lenape living in the North (Hudson) River drainage, likely including Passaic River bands. European items considered "trifles" by the Dutch—cloth, metal tools, glass beads, and liquor—were exchanged for valuable peltries, particularly beaver. Operating largely from their ships, this early phase of the Dutch presence in North America did not include any permanent occupation of the New Netherland territory. In 1614, the United New Netherland Company was granted a charter, which provided the company with a monopoly on trade in the region. Again, no settlements were planned, though the Fort Nassau trading fort was constructed on an island (near today's Albany) in the upper North River.[80]

In 1621, the Dutch West India Company replaced the New Netherland Company and was granted the American trade monopoly. In 1624, the Dutch staked their claim in North America by sending thirty emigrant families, many of them French Protestants known as Walloons, to establish farming colonies on the North River, the Fresh (Connecticut) River, and the South (Delaware) River. Two colonies, each made up of eighteen people, were located on the North River, one on Noten (Governor's) Island (near Manhattan). The Company placed another colony on the upper North River to help construct Fort Orange to replace Fort Nassau, previously destroyed by floods.[81] Fort Orange was located on the west bank of the river, reportedly on land within Mahican territory, close to established Mahican and Mohawk (Iroquois) trading paths.[82] By end of 1625, there were an estimated 200 settler and traders in the New Netherland territory.[83]

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[80] Kraft, *The Lenape-Delaware Indian Heritage,* 369–373.

[81] Kraft, *The Lenape-Delaware Indian Heritage,* 402–403.

[82] Nicholaes Van Wassenaer in John Franklin Jameson, ed. *Narratives of New Netherland 1609–1664* (New York: Charles Schribner's Sons, 1909), 75. While Wassenaer, and the Vinckeboons map (Figure 9) describe the land as Mahican, De Laet described the land on which Fort Nassau was erected as "upon an island on the west side of the river, where a nation of savages dwells called the Mackwaes [Mohawk]." (cited in Kraft, 369).

[83] Reported by Wassenaer in Jameson, *Narratives,* 82.

Figure 9: 1639 Joan Vinckeboons' Noort Rivier map. (Library of Congress)

It is not clear whether the land for the Walloon colonies was actually purchased from the native occupants; however, by 1625, the Company appeared to pursue a policy of land purchase. It is important here to note the Lenape view of land and territory. John Heckewelder wrote of the Lenape belief in collective possession:

> that he *[Mannitto]* made the earth and all that it contains for the common good of mankind; when he stocked the country that he gave them with plenty of game, it was not for the benefit of a few, but of all. Every thing was given in common to the sons of men. Whatever liveth on the land, whatsoever groweth out of the earth, and all that is in the rivers and waters flowing through the same, was given jointly to all, and every one is entitled to his share.[84]

Thus, the Lenape believed that the various deeds and land treaties made with Europeans were agreements only to *share* the land, land which nurtured and sustained them and without which they could not survive. The Dutch, and later the English, believed that they were *purchasing* the land in a permanent conveyance of ownership. These opposing cultural views of the land transactions between Lenape and European colonizers formed the

[84] Heckewelder, *An Account of the History,* 100–101.

foundation of recurring disputes and Lenape resistance, and ultimately led to Lenape loss of the land they had occupied and utilized for centuries.

In 1625, the Dutch West India Company instructed New Netherland Director Willem Verhulst to find a proper site on which to erect a new trade and administration fort, and to "induce [the Indians] to give up ownership and possession to us" for that purpose, "either in return for trading-goods or by means of some amicable agreement."[85] The next year the "Island Manhattes" was "purchased" from the *Canarsee (Manhattas)* for sixty guilders. There the new Director-Governor Peter Minuit erected Fort Amsterdam. In 1626, the settlers at Fort Orange were moved to the Fort Amsterdam colony, both to avoid a violent conflict between the Mahicans and Mohawks and "to strengthen with people the colony near the Manhates, who are becoming more and more accustomed to the strangers."[86]

The West India Company sought, in 1629, to increase the New Netherland settlement population by passing the Charter of Freedoms and Exemptions. The charter allowed private landowners *(patroons)* to establish colonies independent of the Company. Patroons were required to first purchase the land from the native "owners."[87] Several patroonships were established on the North (Hudson) River, including *Pavonia,* which was located on land near the mouth of the Passaic River, encompassing the Hackinsack village of *Gemoenapa*.[88]

The developing trade with the Dutch impacted more than just the land occupied by the Mahican and Lenape bands. The European's seemingly limitless demand for beaver pelts as well as the skins and furs of the larger game animals significantly altered long-standing seasonal hunting patterns. In 1649 Adriaen Van der Donck stated that as many as 80,000 "beavers are annually killed in this quarter of the country, besides elks, bears, otters, deer and other animals."[89] "Improved hunting equipment—muskets, axes, metal knives, iron tipped arrows, and spears" accelerated the "systematic overkill" of beaver and subsistence game, according to Kraft.[90] Within a relatively short span of time,

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[85] De Laet, as cited in Kraft, *The Lenape-Delaware Indian Heritage*, 408.

[86] Wassenaer in Jameson, *Narratives*, 85.

[87] A. J. F. Van Laer, ed., *New York State Library Van Rensselaer Bowier Manuscripts* (Albany: University of the State of New York, 1908), Section XXVI, 151. Lenape bands did not "own" land in the sense that Europeans viewed land ownership.

[88] Van Laer, *Van Rensselaer Bowier Manuscripts*, 158–159. *Rensselaerswyck* was located farther north, near Fort Orange (later Albany), on land "purchased" from Mahicans. Van Rensselaer's "purchase," dated Aug. 13, 1630, "embraced: 1, the land on the west side of the river from Fort Orange to the Mohawk; 2, a small tract on the east side of the river, on both sides of the present Mill Creek, from opposite Castle Island to a point opposite Fort Orange; 3, the land on the west side of the river from a point south of the Normans Kill to the north point of Castle Island, or possibly to Fort Orange." (Van Laer, *Van Rensselaer Bowier Manuscripts*, 167)

[89] Adriaen Van der Donck, *A Description of New Netherlands* (Jeremiah Johnson, trans., Collections of the New-York Historical Society. Printed for the Society, 1841). Second Series. Volume 1, 210, www.americanjourneys.org/aj-096/, accessed 2/11/2019.

[90] Kraft, *The Lenape-Delaware Indian Heritage*, 372.

bands in the North River drainages came to depend upon European guns, metal, and cloth, replacing traditional stone tools, ceramic pots, and animal skin clothing.

It was in 1643, under Director Kieft, the fourth director of New Netherland at Fort Amsterdam, that conflicts between the colonists and the bands of the North River drainages escalated. Mutual mistrust, thefts, and isolated acts of revenge on both sides fueled the conflicts. The settlement established on Staten Island *(Eghquaons)* by David Pieterszen de Vries in 1638, presumably "purchased" from the "hereditary owners of Staten Island," (the Tappan, Hespatingh, Hackinsack, Gweghkongh, and Hweghkong [Acquackanonk]) was destroyed by Raritans in 1640, touching off a round of incidents along the lower North (Hudson) River drainage.[91]

In 1642, after a large number of Tappans had taken refuge in villages located near newer Dutch settlements, Director Kieft proposed a war against the Indians. De Vries, who had recommended against violence as a member of the governing council of twelve, recalled Kieft's reaction, saying "He had a great desire… to make these savages wipe their chops; that he had ordered Jan Claes Damen with Jacob Planck, who had requested it, to commence the job." Though de Vries protested, the men were already on their way to Pavonia, where the Hackinsack town of *Gemoenapa* was located, "to commit the murder." An estimated eighty Wiechquaeskeck and Hackinsack men, women, and children "were butchered during their sleep," according to de Vries, while an additional forty were murdered at Corlaer's Hook on the east side of Manhattan Island.[92] "Governor Kieft's War" raged on both sides from 1643 until 1645 when Kieft was recalled to Holland and replaced with Peter Stuyvesant.

The troubles continued for Director Stuyvesant in the increasingly tight quarters along the lower North River, with both Indian resistance and threatened English incursions from the New England colonies. The so-called "Peach War" erupted after a Dutch official killed "an Indian woman for taking some peaches or other fruits from his garden," which prompted another massacre of Dutch settlers on Staten Island. Stuyvesant, however, was unable to enlist support from the failing West India Company for defense of the New Netherland settlements.[93] In 1655, the North River "troubles" quieted down, giving Stuyvesant the opportunity to turn his attention to ending the Swedish intrusion into New Netherland territory on the South River.

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[91] As referenced in the 1657 "Indian Deed for Staten Island," Gehring, *New Netherland Correspondence*, 2003, 141; David Pieterszen de Vries in Jameson, *Narratives*, 227.

[92] David Pieterszen de Vries in Jameson, *Narratives*, 227–228; Kraft, *The Lenape-Delaware Indian Heritage*, 414.

[93] Gehring, *New Netherland Correspondence*, 103-104.

The Anglo-Dutch Wars and a Renewed British Claim

The return of Dutch rule along the South (Delaware) River in 1655 came a year after the conclusion of the first Anglo-Dutch War (1651–1654). Two other brief wars between the British and Dutch occurred in 1665-1667 and 1672-1674. Though the Dutch and the English had been allies against the Spanish in the late sixteenth century, their growing dominance in mercantile trade and colonizing new lands repeatedly set the two countries at odds through much of the seventeenth century. While the two country's navies engaged in battle, England actively sought to seize Dutch colonial ports and settlements in Africa, the East Indies, and North America in an effort to extend its trading powers.

Thus in 1664, just before the start of the second Anglo-Dutch War, King Charles II of England determined to capture the New Netherland territory. When Richard Nicholls sailed into the New Amsterdam harbor with four English warships in August 1664, he met no resistance. Exhausted after nearly a decade of battling to maintain the colony without Company assistance, Stuyvesant negotiated a "Capitulation" agreement in which the English took control of the territory.[94]

In March 1664, six months before Nicholls' conquest of New Netherland, King Charles II granted the territory to his brother James, the Duke of York. The Duke's proprietary grant included the land from the Connecticut River southward along the east side of the Delaware River and Bay, much of that area soon to be known as New Jersey.[95] Just two months later, in June 1664, the Duke of York granted joint proprietary rights for the Province of New Jersey to Sir George Carteret and John, Lord Berkeley. After Nicholls' conquest of New Netherland in August, New Amsterdam was renamed New York in the Duke's honor, and Nicholls was installed as governor of the Duke of York's territory.[96] One year later, in August 1665, Carteret and Berkeley assigned Philip Carteret as the governor of the New Jersey proprietary, with Elizabeth-Town as the provincial capital.[97]

In March 1674, Lord Berkeley sold his half interest to John Fenwick as trustee for Edward Byllynge, after which the joint proprietary of New Jersey was divided into East and West New Jersey (commonly East and West Jersey). Sir George Carteret's East Jersey proprietary, patented by the Duke of York in July 1674, was described as "being the territory lying north of a line connecting Barnegat Bay on the Atlantic Ocean with Pennsauken

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[94] Jameson, *Narratives of New Netherland*, 460; John Romeyn Brodhead, *History of the State of New York, Volume I* (New York: Harper & Brothers Publishers, 1859), 741-742, accessed 8/16/2019, https://books.google.com.

[95] The grant did not include the land on the west side of the Delaware River and Bay, later called Delaware, though James later claimed that land anyway, and in 1692 granted the "three lower counties" to William Penn.

[96] Joseph R. Klett, "Using the Records of the East and West Jersey Proprietors" (New Jersey State Archives, 2014), 3, www.nj.gov/state/archives/pdf/proprietors.pdf, accessed 2/18/2019.

[97] Governor Nicholls issued the patent for Elizabeth-Town in December 1664 and for Middletown and Shrewsbury in 1665, although all three settlements were within the Carteret and Berkeley proprietary grant. (Klett, "East and West Jersey," 3).

Creek on the Delaware River."[98] In 1676, the East-West Jersey partition was adjusted in the "Quintipartite Deed," the deed of partition between George Carteret and Edward Billinge (Byllynge), Gawen Lawrie, Nicholas Lucas, and William Penn (trustees for Byllynge). A description of Carteret's "East New Jersey" began at Little Egg Harbour (in Barnegat Bay), "extending eastward and northward along the sea coast and the said river called Hudson's river," then to forty-one degrees latitude (the New York boundary), then in a straight line "to the northermost branch, or part of the before mentioned river called Delaware river," and there intersecting with the straight division line down to Little Egg Harbour.[99]
See Figure 10 on page 43, and Figure 8 on page 33.

[98] Klett, "East and West Jersey," 3. Pennsauken Creek is located nearly opposite Philadelphia.

[99] GG (WJ), Folio 169, "Early Land Records, 1650-1801," *New Jersey State Archives*; "Quintipartite Deed of Revision, Between E. and W Jersey: July 1st, 1676," *The Avalon Project*, Yale Law School, Lillian Goldman Law Library, http://avalon.law.yale.edu/17th_century/nj06.asp, accessed 2/25/2019. The "northermost branch" of the Delaware River was not named, but may have been intended to be the Neversink River, which empties into the Delaware at today's New York/New Jersey boundary.

Figure 10: The State of New Jersey, about 1780, showing division lines. (Library of Congress)

Extension of Settlements into the Passaic Valley

It was not until English administration arrived in the form of the New Jersey proprietary that European settlements moved into the interior drainages of the Hudson River. The valley of the Passaic River, called the Northwest Kil by Danckaerts and sometimes appearing on early maps as the "Rivier Achter Kol," was among those that escaped intrusion by Dutch colonists.[100] In 1664, John Bailey, Daniel Denton, and Luke Watson "purchased" an unspecified acreage for the Elizabeth-Town settlement from the sachems Mattano, Cowescomen, and Manamowavoe. The substantial tract's boundaries extended along the Raritan River on the south and today's Arthur Kill (Staten Island Sound) on the east, running north to "Cull Bay" (Achter Kol, today's Newark Bay), "till we come at the first river which sets westwards up after Cull Bay" (likely Passaic River), and "west into the country twice the length as it is broad from the north to the south of the aforemention'd bounds."[101]

Another early English settlement was the "town" of "Pisayak" (later Newark), already occupied by "English Inhabitants" in 1667 when they entered into a deed agreement with the "Indians belonging to Hackensack."[102] The tract was located within the Elizabeth-Town settlement "purchase;" however, the Hackensack reportedly disputed that claim and a new agreement was reached. The "townsmen" named in the deed as "agents of the English Inhabitants of Pisayak" included John Browne, Obadiah Bruen, Robert Denison, Samuel Kitchell, and Michael Tomkins. The Hackensack representatives named in the document included Cacakque, Capatamine, Hairish, Mamustome, Napeam, Perawae, Peter, Sessom, Wamesane, Wapamuck (Sackamaker), and Wecaprokikan. The English were not reticent about supplying guns in trade, as the payment included ten guns and twenty pistols, as well as powder and lead. Liquor, beer, wampum, swords, knives, axes, hoes, kettles, coats, blankets, and breeches rounded out the payment. The transaction included a provision for "free liberty and range for Cattell, Horses, Hoggs, although they

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[100] James and Jameson, *Journal of Jasper Danckaerts,* 173; Jameson, *Narratives,* x–xi.

[101] Aaron Leaming and Jacob Spicer, *The Grants, Concessions and Original Constitutions of the Province of New Jersey.* (first published 1758), "Indian Deed," 670, *The New Jersey Digital Library,* http://njlegallib.rutgers.edu/statutes/LS.php#gc, accessed 2/27/2019; also Liber 1, Part A (EJ), Folio 181, *New Jersey State Archives*; Dr. Evelyn Ogden interprets the tract as totaling 500,000 acres, "bound by the Achter Kol, the Passaic River in the north and the Raritan River in the South, and extending to the west thirty-four miles." Evelyn Hunt Ogden. *Founders of New Jersey: First Settlements, Colonists and Biographies by Descendants.* 3rd ed.) New Jersey: The Descendants of Founders of New Jersey, 2016), 28. http://www.njfounders.org/sites/default/files/DFNJ%20 2016%20Edition%207-17-16%20OGDEN.pdf.

[102] Liber 1, Part B (EJ), Folio 270, "Early Land Records, 1650-1801," *New Jersey State Archives,* https://wwwnet-dos.state.nj.us/DOS_ArchivesDBPortal/EarlyLandRecords.aspx, accessed 2/19/2019.

range beyond any of the bounds in this deed expressed, to feed and pasture without Molestation of or Damage to the Owners of the Cattell, etc."[103]

In July 1668, *New Barbadoes,* a tract of over 15,000 acres located between the Hackensack and Passaic Rivers was conveyed in two deeds, one by proprietary governor Philip Carteret, and the other from the Hackensack. The first deed was dated July 4, 1668, from the proprietary to William Sandford "of Barbadoes, and his Associates." This conveyance required the new owners to settle at least eight families on the tract within three years.[104] Sixteen days later, on July 20, 1668, Sandford "purchased" the same land from several Hackensack representatives, including Anoren, Gosgue, Hanyaham, Kenarenawack, Tamark, and Tantagua. Sandford paid "170 fathem of Black Wampum, 200 fathem of White Wampum, 17 Match Coates, 16 Gunns, 60 double hands of powder, 10 paire of britches, 60 knives, 67 barrs of lead, one Anker of brandy, three half fats of bear [beer], elleven blankets, 30 Axes, 20 howes, and two coates of dorens" for the extensive tract.[105] That the proprietary deed came first, before the Hackensack deed, is indicative of the English proprietors' strong belief in their right to the land via the Duke of York's grant. Despite what Carteret, Berkeley, and Sandford might have believed, it is unlikely that the Hackensack sachems intended to give up their right to hunt and occupy the land.

It was more than ten years later, in 1679, that two deeds of conveyance were recorded for land within the hunting territory of the Acquackanonk (variously spelled Haquequenunck, Aquenongue, and Aqueguonke), deep within the Passaic River valley. In the first deed, "Captahem Indian Sachem and Chief, Owner of a certain tract of Land Lying and being upon Pisawyck River knowne by the name of Haquequenunck," conveyed an unspecified amount of acreage to four Dutch men, Hans Dederick, Gerret Garretson, Walling Jacobs, and Hendrick George. The "sale" by Captahem was made with the "consent of Memiseraen, Mindawas, Ghonnajea, Indians and Sachems of the said Contry," for "a certain Parcel of goods, Blankets, kettles, powder and other Goods to my Content and Sattisfaction."[106] Several days later, "Christopher Hooghland, Jacques Corteliou, Captain Elbert Elbertse, Captain Richard Stilwell and their Associates," purchased part of a "tract of land called Aquegnonke" bounded on the west by Passaic and on the east by the Saddle River (Saddle River tract).[107]

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[103] Liber 1, Part B (EJ), Folio 270, *New Jersey State Archives*; Ogden, *Founders of New Jersey* 52. The cattle provision is significant as "Kieft's War" (1643–1645) arose in part out of Indian complaints that settlers' free-ranged cattle would often damage the Indian's field corn.

[104] Liber 1, Part A (EJ), Folio 33, *New Jersey State Archives*.

[105] Liber 1, Part A (EJ), Folio 42, *New Jersey State Archives*.

[106] Nelson and Shriner, *History of Paterson and its Environs,* 90; Liber 1, Part B (EJ), Folio 211, *New Jersey State Archives*. This tract includes the land on which Paterson later developed.

[107] Liber 1, Part B (EJ), Folio 210, *New Jersey State Archives*; Nelson and Shriner, *History of Paterson,* 90.

In 1684, the fourteen Dutch owners of the larger Acquackanonk *(Haquequenunck)* tract sought to make their settlement official by petitioning the East Jersey proprietary for a patent:

> The peticion of Hans Dedricke Elias Mekellson and Adrian Post in behalfe of themselves and other Inhabitants of Aquaquanuncke setting forth they had purchased by order of the late Governor Carteret A Tract of Land and Containeing 5520 Acres wch is to bee Devided amongst fourteen ffamelys of them there settled—pray they may have a gen'-all Pattent for the same.[108]

The Patent described the bounds of the tract:

> upon Pisaick River in the County of Essex and called and knowne by the name of Acquickenunck Beginning att the Northermost bounds of the towne of Newark and soe Runeing from the Lowermost part to the uppermost part thereof as far as the steepe Rocks or mountaines and from the said Lowermost part along Pisaick River to the great ffalles thereof and soe along the steep Rocks and mountaines to the uppermost part of Newarke bounds afores'd.[109]

The fourteen owners of the patent, Hans Diderick, Garrett Garratson, Walling Jacobs, Elias Machielson, Hartman Machielson, Johannes Machielson, Cornelius Machielson, Adrian Post, Urian Tomason, Cornelius Rowlofson, Symon Jacobs, John Hendrick Speare, Cornelius Lubbers, and Abraham Bookey, each received one lot of one hundred acres with frontage on the Passaic River. Outlots of fifty acres were later platted and added to each owner's acreage.[110]

By the time of Danckaerts' 1680 visit to Acquackanonk, as the tract was known, he described only one Indian family still living on the 24,000-acre tract. Danckaerts was looking for land on which to settle a religious colony of Labadists. He recounted that they visited the Acquackanonk tract belonging to "Jaques of Najack" (Jacques Cortelyou) because Cortelyou and others in the nearby Bergen settlement identified a tract of as much as 60,000 acres, located "above the falls… which the Indians were disposed to sell, and we could buy for a small price."[111]

These land transactions are indicative of the quickening pace of settlement, particularly in northern New Jersey. As the European settlers pushed the frontier inland from the initial coastal settlements, Lenape bands were forced to move to less populated areas, first

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[108] Nelson and Shriner, *History of Paterson,* 94. Nelson later states that the patent in fact encompassed about 10,000 acres (Nelson and Shriner, *History of Paterson,* 96).

[109] Nelson and Shriner, *History of Paterson,* 95; Liber A (EJ), Folio 164, *New Jersey State Archives.*

[110] Nelson and Shriner, *History of Paterson,* 98; see also, Lisanne Renner, "From Farms to Factories: Two Centuries of Shaping Paterson's Urban Forms," *The North Jersey Highlander,* Vol. 33, 1997, 2.

[111] James and Jameson, *Journal of Jasper Danckaerts,* 85. The Bergen settlement located on the peninsula at the mouths of the Passaic and Hackensack Rivers (Newark Bay), encompassing the former Dutch Pavonia settlement.

on the fringes of their traditional territories, then into neighboring territories, and later to Pennsylvania, Ohio, Wisconsin, and finally Indian Territory (Oklahoma).

The evolution of the governing divisions in the East Jersey proprietary is illustrative of these changes over time. By November 1675, there were seven settlements within the East Jersey boundary—Bergen, Elizabeth-Town, Newark, Woodbridge, Piscataway, Middletown, and Shrewsbury. In 1683, four East Jersey counties were officially established—Bergen, Essex, Middlesex, and Monmouth. The Passaic River valley was included entirely within Essex County until 1688 when, under an agreement to settle a newly drawn East-West division known as the "Keith Line," the Passaic and Pequennock rivers became the western boundary of East Jersey and Essex County. Despite its reduced size, by 1693 the population of Essex County had grown enough to warrant further governing division into three townships: New Barbadoes & Acquackanonk, Newark, and Elizabeth-Town.[112]

[112] Klett, "East and West Jersey," 11. In 1695, the East Jersey proprietary reportedly "disowned" the 1688 Keith Line resolution, in which the land west of the Passaic and Pequennock Rivers became part West Jersey, Burlington County. (Bob Barnett, "Where was the West Jersey/East Jersey line?" http://westjersey.org/wj_line.htm, accessed 2/26/2019)

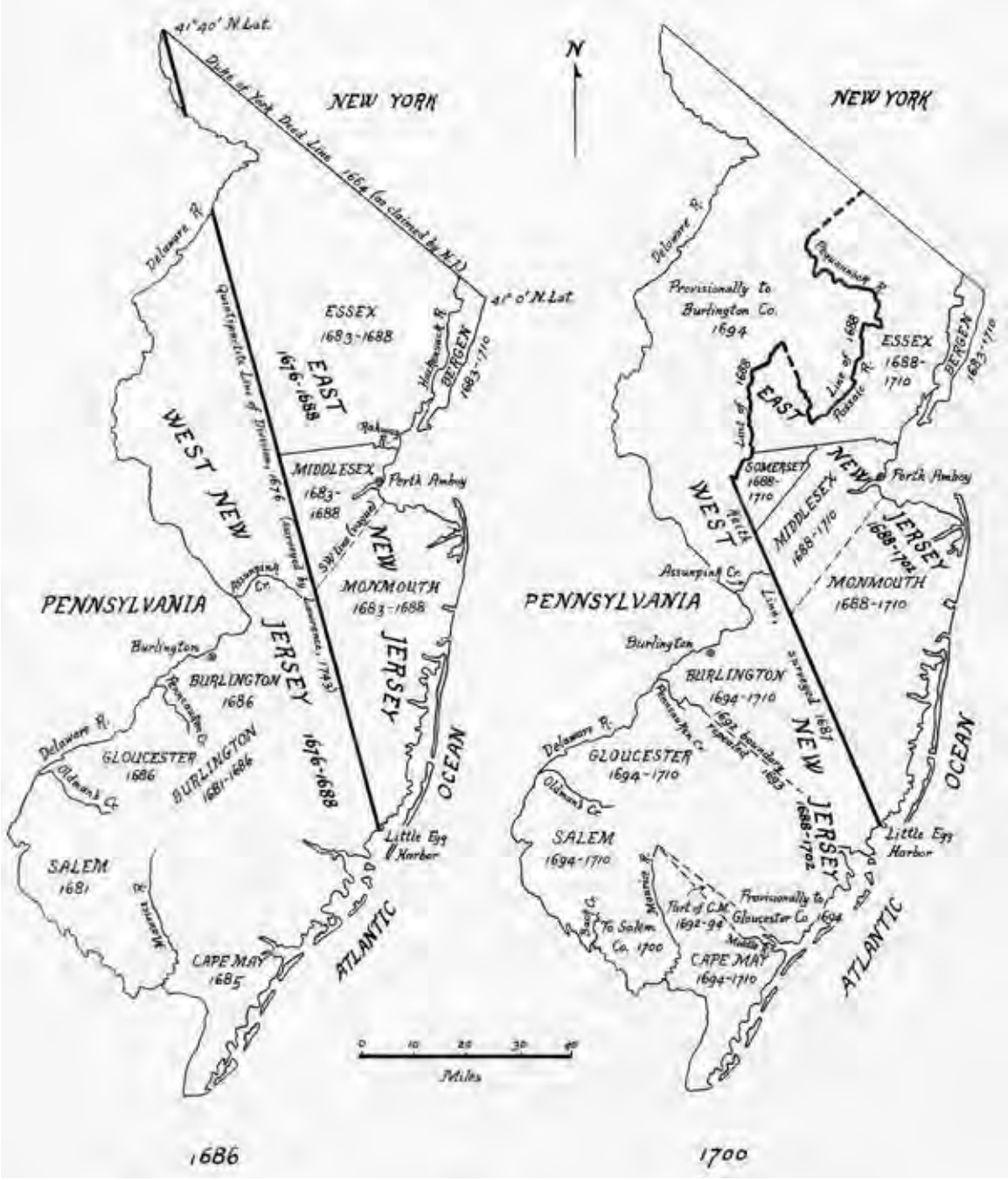

Figure 11: Maps showing the evolution of New Jersey divisions.
(From Joseph Klett, "Using the Records of the East and West Jersey Proprietors," New Jersey State Archives.)

Passaic River Lenape bands continued to enter into land agreements through the 1680s, including a 1684 conveyance from Canandus, Mindowashen, Neweuapee, and Seweebromb to the East Jersey Proprietors for two tracts located between the Passaic River and Bound Brook.[113] By the 1690s a number of bands, by then greatly reduced in numbers

[113] Liber A (EJ), Folio 262, *New Jersey State Archives*.

by European-borne diseases such as smallpox, had migrated to the territory of the Pompton or Oping (northwest New Jersey), where disputes over the shifting boundary between East and West Jersey delayed land sales to European settlers. New Jersey historian Robert Grumet described the Pompton area as "a diverse Indian community whose population included many native people from neighboring New York, others from New Jersey, and a number of Wampano-speaking people from southwestern Connecticut."[114] It was indicative of the relentless pressure of European settlement pushing native bands further westward.

Land around the Great Falls of the Passaic

European occupation around the Great Falls of the Passaic intensified beginning in 1695 when a new settlement was laid out on a part of the Acquackanonk tract on the southwest side of the Passaic River. Known as the Gotham Division, it was composed of fourteen parcels, with the plat indicating eleven Dutch owners of individual parcels.[115] A second division— the Boght Patent—on the southwest side of the river occurred in 1714, though in reality it was a division or partition of the patent land. Laid within the bend of the river where Paterson was later platted, the division lines from the Boght Patent served as survey lines for Paterson's street grid, here described by Lisanne Renner:

> The patentees divided the tract into two nearly equalsize portions separated vertically by the *dwarslyn,* or division line, which became present East 18th Street and formed the spine of the linear settlement. As late as 1892, a fence stood designating this historic division. The land east of the *dwarslijn* extending to the river was subdivided into 15 horizontal strips; the division lines all run parallel to Park Avenue. Likewise, land west of the *dwarslijn* was subdivided into l3 strips, with the still-existing Broadway separating two of them, and the other lines running parallel to Broadway. The northernmost of these farms west of the *dwarslijn* extended to the river, and those south of Broadway ran to Garret Mountain. Each lot contained about 150 acres, and the lines separating them eventually evolved into narrow roads, called farm roads or drift ways. Many of these have corollaries in modern Paterson. Roads that break from this pattern, such as Vreeland Avenue and Wesel Road, were laid out by formal agreement among the settlers for pragmatic purposes.[116]

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[114] Grumet, "Beyond Manhattan," 50.

[115] "Map of Gotham Division of the Patent of Acquackanonk, 1684," *The New York Public Library Digital Collections*, https://digitalcollections.nypl.org/items/e6cae040-d5d5-0134-4c04-00505686d14e#/?rotate=90, accessed 2/28/2019.

[116] Renner, "From Farms to Factories," 2; see also Nelson and Shriner, 102–103, and Patricia Iolavera, et al., *Great Falls Historic District, Paterson, New Jersey, Special Resource Study* (Philadelphia, PA: US Dept. of the Interior, National Park Service, Northeast Region, Division of Park Planning and Special Studies, November 2006), 19.

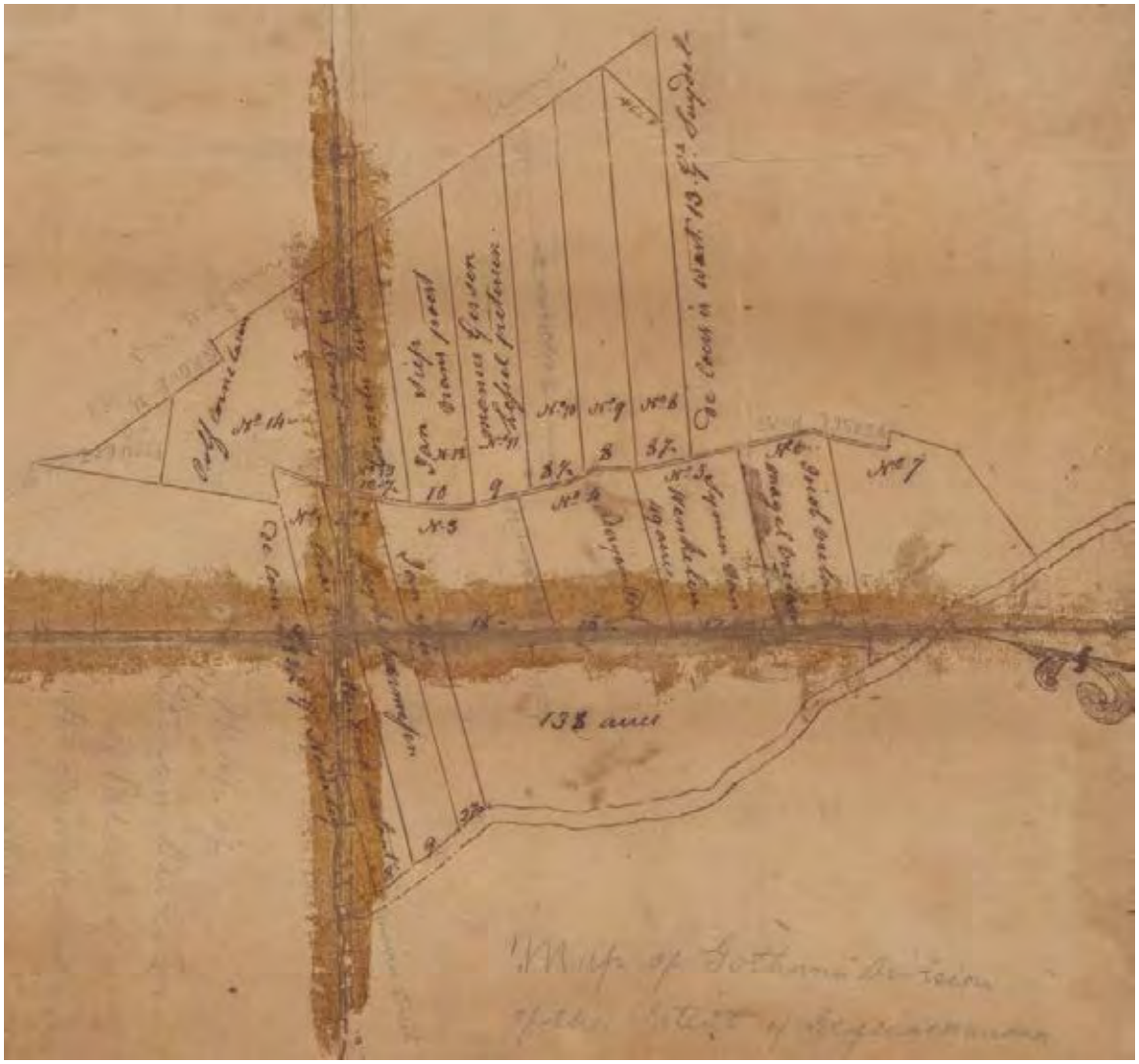

Figure 12: The Gotham Division (New York Public Library)

The Totowa Patent, granted in 1710 to George Wilcox (perhaps Willocks) and located on the north of the Passaic River, was divided into 100-acre lots.[117] This section also later became part of the Paterson community.

[117] Elizabeth Clarke, et al., *Vista Park Master Plan* (City of Paterson, NJ, August 2018), 19–20.

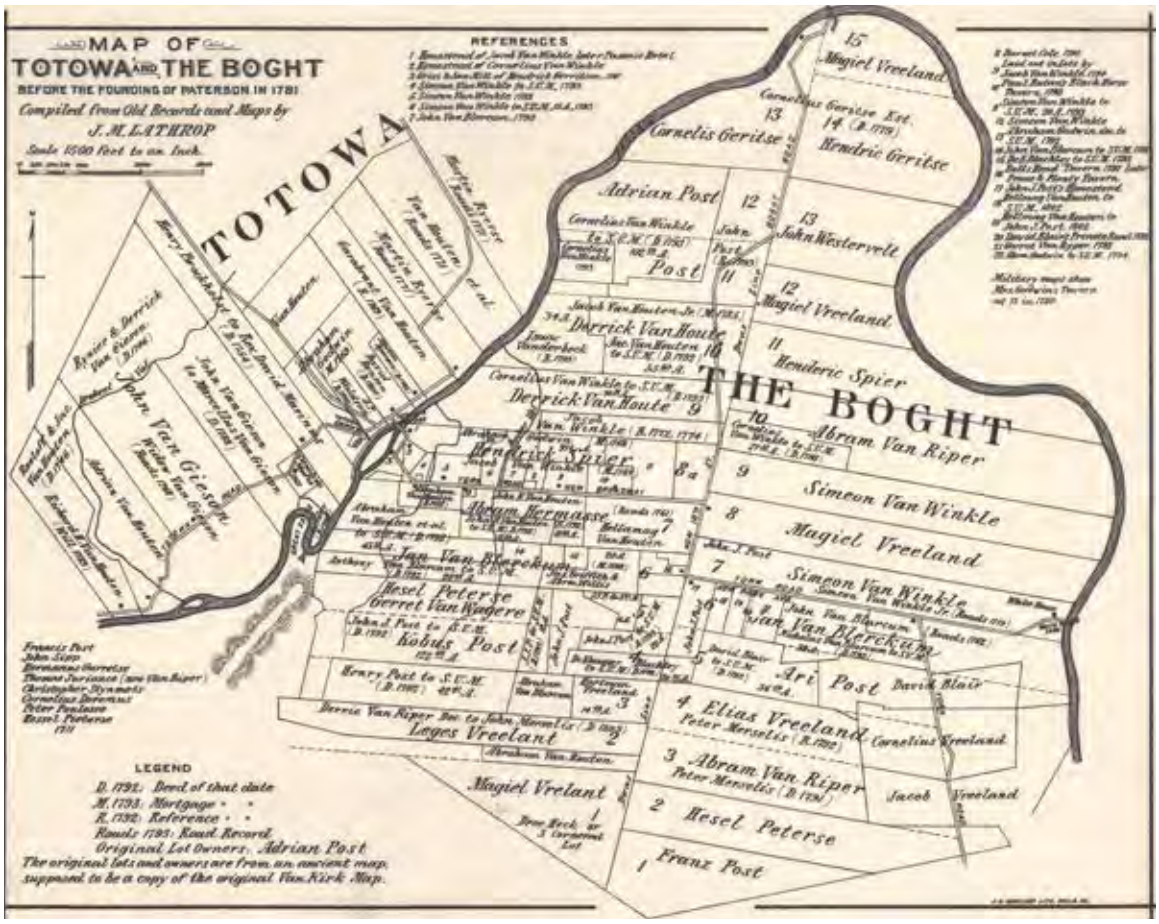

Figure 13: Map of Totowa and The Boght, J.M. Lathrop, n.d. (Paterson Free Public Library)

In December 1709, the East Jersey proprietors surveyed a tract of 42,500 acres on the north side of Passaic River for a group of eight investors. The large tract was described as "being bounded. . . North West by a Chain of Hills or Mountains, North West by Lands Newly purchased by Elias Boudinot and others, South East by the above named Sadle River and South West by Major Brockolst and Arent Schuyler's Land and by other Tracts which boundeth upon Pissaick River."[118] The survey was followed five months later, in May 1710, by a conveyance to just three of the eight men—John Auboyneau, Elias Boudinot, and Peter Fauconnier—from an apparently consolidated group of Lenape bands under the leadership of Memerescum, who described himself as "Sole Sachem." Memerescum claimed to represent "all the Nations of Indians on Remopeck River [Ramapo?] and on the West and East Braches thereof, on Sadle River, Pasqueek River [Passaic?], Naraslunk River,

[118] Liber I (EJ), Folio 321, *New Jersey State Archives*.

Hackinsack River, and Tapaan."[119] That same year, all the land north of the Passaic River was included within an expanded Bergan County boundary.[120]

Thomas Pownall, Lieutenant Governor of New Jersey from 1755 to 1757, sketched the Great Falls of the Passaic River, probably during his travels between 1753 and 1755. The sketch was later published as an etching by British artist Paul Sandby. In preparing his first revision of *A Topographical Description,* published in 1776 to accompany Lewis Evans' "Map of the Middle British Colonies," Pownall drew upon his travel journals to describe the Passaic River landscape. The Dutch settlements or "neighborhoods," "what we English call towns," appeared as pockets of cleared land within a landscape of "natural Sylvan beauty," reminiscent of the deer parks of the English aristocracy. "Roads run along the banks of the river," wrote Pownall, who followed the roads to the "Falls of Passaik" [sic]. He described the journey from the home of Col. John Schyler [sic] near Newark, "To Aquacinock 6 [miles]: Thence to Weisel 6 [miles]: Thence to the long bridge over the Passaick [sic] River 2 [miles]: Thence to the Falls one [mile]." Pownall then described the Falls:

> The Falls of Passaik [Passaic] are a very curious natural Phenomenon. The River running round the Back of a Rocky Cliff, which by some Accident has been shattered & riven from Top to Bottom about 90 feet, turns short round & Tumbles head long with an Inconceivable force & Velocity down this horrid chasm foaming with its hoarse stunning roar at its base more like something combustible than Water. There is a lesser Chasm on the right side of this Through which a column of Water shoots directly across the great fall & has a peculiar effect & appearance. The Rocks on the left hand of this great Chasm is a Steep Cliff the Rocks of which are riven in two Places from top to bottom. I measured their height with a pack thread & stone, &, as near as I could regulate my measure, they were 90 feet high. I jump'd across one of these Chasms to go to the Cliff: & when I had done it, my head so turned; my heart misgave me; and It required an effort of mind to go back again. I think of it now with dread.[121]

Though the Great Falls of the Passaic remained a powerful natural resource, Thomas Pownall's description of the Passaic valley reveals the extent to which European settlements had begun to change the landscape. It was a tide the native Lenape bands would not be able to stop or even slow.

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[119] I (EJ), Folio 317, *New Jersey State Archives*. The list of Lenape signers to the deed included Ayamauugh, Iaphome, Maskainapulig, Memerescum (Sole Sachem), Rawantaques, Sipheme, and Waparent.

[120] Klett, "East and West Jersey," 7–8.

[121] Thomas Pownall, Christopher Gist, and Lewis Evans, A Topographical Description of Such Parts of North America as are Contained in the (Annexed) Map of the Middle British Colonies, &c., in North America, Lois Mulkearn, ed. (Pittsburgh, PA: University of Pittsburgh Press, 1949), 98–99, HathiTrust Digital Library, accessed 11/4/2019, https://catalog.hathitrust.org/Record/000600774/Home.

Figure 14: 1761 Paul Sandby etching of the Great Falls of the Passaic, from Thomas Pownall sketch. (Library of Congress)

Conclusion

The Lenape numbered in the thousands around the time of European contact in the first half of the seventeenth century. Those numbers were significantly reduced by the end of the eighteenth century; European diseases alone, for which the Lenape had no natural immunity, are said to have reduced the population by ten to thirty percent by 1800.[122] Battles, massacres, and individual acts of resistance against the invading European colonists also reduced the native population.

Through the first half of the eighteenth century, most remaining northern (New York/New Jersey) Munsee Lenape bands removed to the Wyoming and Shamokin areas on the Susquehanna River, while the southern Unami Lenape (by then known as Delawares) migrated to the Ohio River. Teedyuscung, called the "King of the Delawares" by European Americans who did not understand Lenape culture, became the spokesman for the Forks and Wyoming bands.[123] At the outbreak of war between the French and the English in 1754, Teedyuscung's bands living on the Susquehanna were experiencing severe drought and

[122] Kraft, *The Lenape-Delaware Indian Heritage,* 389, citing Jasper Danckaerts.

[123] Kraft, *The Lenape-Delaware Indian Heritage,* 456–457.

potential famine, while also facing French incursions. The British distain for the American Indian occupants of the land now claimed by the British crown would turn potential Indian allies in the war into dangerous enemies aligned with the French.[124]

In 1757, Teedyuscung entered into a peace agreement with Pennsylvania governor William Denny. In October of the next year, the lieutenant governor of Pennsylvania and the governor of New Jersey met at Easton, Pennsylvania, with various consolidated Lenape bands, including the former northern New Jersey bands described as the "Minisinks and Wapings." The Minisinks complained that "they were wronged out of a great deal of Land, and the English settling so fast, they were pushed back, and could not tell what Lands belonged to them.... We say that we have here and there Tracts of Land that have never been sold."[125] One of the Minisink chiefs, Egohohowen, articulated their long-held belief that they had never "sold" their hunting rights. He addressed New Jersey Governor Bernard, "we desire... that your People may not look on the wild Beasts of the Forest, or Fish of the Waters, as their sole Property; but that we may be admitted to an equal Use of them."[126] The governor was dubious, given the late hostilities associated with the war, but promised to "issue a Proclamation... that, for the Future, they should be treated as Brethren."[127] The resulting agreement, known as the Treaty of Easton, included comprehensive "purchases" of both Minisink and Munsee Lenape territory, including the Passaic valley:

> all the remaining Lands in New-Jersey, beginning at Cushytunk, and down the Division Lines between New-Jersey and New-York, to the Mouth of Tappan Creek at Hudson's River, and down the same to Sandy-Hook, thence to the Mouth of Rariton, thence up that River to the Falls of Alamatung, thence on a strait Line to Paoqualin Mountains, where it joins on Delaware River, thence up the River Delaware to Cushytunk.[128]

This deed was executed by "the Chiefs of the Munsies, Wapings, Opings, or Pomptons, Sixteen in Number" and witnessed by the Chiefs of the Six Nations. Most of the New Jersey

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[124] C. A. Weslager, *The Delaware Indians: A History* (New Brunswick: Rutgers University Press, 1989), 227.

[125] "Minutes of the Treaty held at Easton," 19–20, *Evans Early American Imprint Collection*, (original printing Woodbridge, New-Jersey: James Parker, Printer to the Government of New-Jersey, 1758) https://quod.lib.umich.edu/cgi/t/text/text-idx?c=evans;cc=evans;view=text;idno=N06429.0001.001;rgn=div2;node=N06429.0001.001%3A2.13, accessed 1/11/2019; see also Liber I-2, Folio 89-94, *New Jersey State Archives*. The minutes noted the representatives of the New Jersey tribes (by then living at Wyoming Valley in Pennsylvania): "CHIHOHOCKIES: alias Delawares, and UNAMIES: Teedyuscung, with divers Men, Women and Children. MUNSIES or MINISINKS: Egotchowen, with sundry Men, Women and Children. MAWHICKONS: Abraham, or Mammatuckan, with several Men, Women, and Children. WAWPINGS or POMPTONS: Nimham, Aquaywochtu, with sundry Men, Women, and Children." ("Minutes of the Treaty," 4)

[126] "Minutes of the Treaty," 27.

[127] "Minutes of the Treaty," 27.

[128] "Minutes of the Treaty," 27.

Lenape bands had long since left the province, with only an estimated 300 still in residence and 200 of those living on the Brotherton Reservation.[129]

In 1762, the "French and Indian" or Seven Years War was officially over, although the peace was briefly interrupted in 1763 by Pontiac's Rebellion. By 1774, Lenape bands had been permanently driven from their ancestral lands along the *Mahicantuck* (Hudson River) and *Lenapewihittuck* (Delaware River) and from their interim territories along the Susquehanna River. Most were settled in territories touching only the western-most borderlands of Pennsylvania and into Ohio. In 1778, a treaty "of perpetual peace and friendship" between the Continental Congress and "the Delaware Nation," was the first treaty enacted by the newly minted United States government. Though the treaty suggested that in the future (should the United States defeat Great Britain) they might "invite any other tribes who have been friends to the interest of the United States, to join the present confederation, and to form a state whereof the Delaware nation shall be the head, and have a representation in Congress," that eventuality did not occur.[130] By the 1840s, much of the remaining Delaware Nation found a final home in Indian Territory (later Oklahoma).

For the most part, it was European settlers, who poured into the Pennsylvania frontier after 1763, who drove the Lenape's westward migrations.[131] New Jersey settlements grew at a more measured pace through the 1760s and 1770s, largely focused in the areas immediately adjoining New York and Philadelphia. Still, the rural hamlets established along the rushing rivers and creeks of northern New Jersey were active with the hum of gristmills, the ring of the blacksmith's anvil, and the whir of home-based manufactures.

Estimated Population of Colonies (European and African American)

Colony	1640	1650	1660	1670	1680	1690	1700	1710
New Jersey				1000	3400	8000	14,010	19,872
Pennsylvania					680	11,450	17,950	24,450
New York	1,930	4,116	4,936	5,754	9,830	13,909	19,107	21,625

Colony	1720	1730	1740	1750	1760	1770	1780
New Jersey	29,818	37,510	51,373	71,393	93,813	117,431	139,627
Pennsylvania	30,962	51,707	85,637	119,666	183,703	240,057	327,305
New York	36,919	48,594	63,665	76,696	117,138	162,920	210,541

Figure 15: "Estimated Population of Colonies," New Jersey, Pennsylvania, New York. (from Dr. Stephen Davies, Vancouver Island University, https://web.viu.ca/davies/h320/population.colonies.htm

[129] Nelson and Shriner, *History of Paterson*, Vol. 1, 76.

[130] Charles J. Kappler, *Indian Affairs: Laws and Treaties*, Vol. II (Washington: Government Printing Office, 1904), 3–5.

[131] Weslager, *The Delaware Indians*, 233, 242–243.

CHAPTER 2

Building a New Nation

> The expediency of encouraging manufactures in the United States, which was not long since deemed very questionable, appears at this time to be pretty generally admitted.
>
> Alexander Hamilton
> *Report on Manufactures,* 1791[1]

Introduction

By the late 1760s, American agriculture had developed into a relatively diversified production of money crops, including tobacco, wheat, and rice, much of which was shipped to England, or to the British West Indies. Manufacturing remained largely the production of things on a small scale—by hand, by individual workers—and was carried out in gristmills, sawmills, fulling mills (pounding wool into felt), blacksmiths, and iron forges. The finer goods were shipped from England, where protectionist legislation ensured the colonies would remain a ready market for British manufacturers.[2] Growing American frustration with mercantile and manufacturing limitations overflowed in the 1760s with Britain's imposition of import duties in an attempt to raise revenue back home. Ultimately, the frustration boiled over into a war for independence, known as the American Revolution.

Once free of Britain's oppressive trade rules, the new United States struggled to develop a framework for governing the independent, but interdependent, thirteen states which formed the Union. The work of Alexander Hamilton was central to realizing the economic potential of the new nation. Much of his economic theory, formulated as he moved through his college years, his service on General George Washington's staff during

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[1] "Alexander Hamilton's Final Version of the Report on the Subject of Manufactures," Hamilton Papers, *National Archives, Founders Online,* accessed 4/16/2019, https://founders.archives.gov/?q=Hamilton%27s%20final%20report%20on%20manufactures&s=1511311111&r=6#ARHN-01-10-02-0001-0007-fn-0163-ptr; Tench Coxe, assistant secretary under Alexander Hamilton during the writing of the *Report on Manufactures,* first penned this line in his second draft of the report: "The expediency of encouraging manufactures in the United States, tho recently deemed very questionable, appears at this time to be generally admitted." ("Tench Coxe's Draft of the Report on the Subject of Manufactures," Hamilton Papers, *National Archives, Founders Online,* accessed 4/16/2019, https://founders.archives.gov/?q=tench%20coxe%20second%20draft&s=1511311111&r=7).

[2] Iolavera et al., *Great Falls Historic District, Special Resource Study,* 11–12.

the war, and as President Washington's Secretary of the Treasury after, eventually found a home in the Society for Establishing Useful Manufactures.

Water Power and Manufacturing in Colonial East Jersey

In discussing American colonial manufacturing before the American Revolution, it is important to note the purpose of colonial settlement, particularly by the British. While the Dutch and French focused largely on the peltries trade with American Indians, the English sought to develop sources for raw materials (timber, iron, potash) and a ready market for British-made products, particularly textiles. Navigation acts passed by Parliament in 1651, 1660, and 1663—which forced colonial commerce to pass through British ports—as well as duties on both imports and exports, served to regulate American manufacturing in the colonial era.[3] Thus, much of pre-Revolution American industry was dominated by cottage crafts which addressed basic necessities (course woolen cloth, carpentry, blacksmithing, tanning) and the milling of subsistence supplies (cornmeal, flour, wood). A nearby source of waterpower was necessary for many of these industries and was abundant in the piedmont regions of the Mid-Atlantic colonies.

Rutgers geography professor (now Emeritus) Peter O. Wacker summarized the manufacturing industries of colonial New Jersey as they appeared just before the American Revolution in his chapter, "New Jersey's Cultural Resources: AD 1660—1810."[4] Citing 1770s New Jersey tax lists, Wacker noted that, "by 1765 every good size stream… was being utilized for some industrial activity." He identified sawmilling among the earliest industries, as vast woodlands were cleared:

> Since most Europeans who settled in New Jersey used frame construction, sawmills were ubiquitous. The books of some of the sawmill operations in existence relatively late in the period (1760s) suggest that in well-settled areas, even very small watercourses were harnessed to provide energy.

Grist or flour mills also appeared early throughout the region:

> Mills were of at least three types with the tub or Norse mill operating like a turbine on extremely small rivulets. Undershot wheels could be placed directly in fairly large streams, such as the Raritan, while overshot wheels needed a head of water provided by a dam or by a flume leading water from a point above the mill structure.

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[3] Victor S. Clark, *History of Manufactures in the United States* (Washington, DC: Carnegie Institution of Washington, 1916), 8, 16–17, accessed 8/13/2019, https://archive.org/details/historymanufact00clargoog.

[4] In Olga Chesler, ed., *New Jersey's Archeological Resources* (New Jersey Dept. of Environmental Protection, Historic Preservation Office, 1982).

The colonial iron industry developed primarily in the Highland counties of north-central New Jersey, where iron ore, timber for charcoal, and swift-moving streams were in abundance:

> The iron industry depended on waterpower to activate bellows for introducing air into forges and furnaces, and to provide the motion required to move the trip hammer which pounded the impurities out of the cast iron and worked pig iron into the bar iron of commerce. In addition to waterpower, the industry required reasonable proximity to the ore (generally magnetite in the Highlands) and somewhat closer association with the fuel source (i.e. charcoal) from the woodlands.[5]

Many of these industries appeared quite early in the colonial settlement of northern New Jersey, beginning after the first permanent Dutch settlement at Bergan in 1660.

Provincial East New Jersey land records indicate that mills were likely already operating in the northeastern counties by the 1660s. The 1669 purchase of a twenty-acre house lot near Papiack Creek (Middlesex County) by John Smith, a millwright of Woodbridge, is among these early references to milling.[6] Mill Brook, a tributary of the Raritan River, also appears in 1660s records, implying the presence of mills among the early East Jersey colonial settlements. As early as 1678, New York merchant Nicholas Bayard established a mill at Bergen.[7] Jasper Danckaerts envisioned installing mills along the Passaic River during his 1679 visit to Acquackanonk, noting, "a small creek… affording water sufficient, both summer and winter, to drive several mills."[8] Danckaerts concluded that, though the tract did afford good waterpower, it did not have enough timber to justify its purchase for the Labadist community.

Sometime after the 1714 Boght division of the Acquackanonk tract, mills were constructed on Lot 8 on the west side of the *dwarslijn* and on the north side of York Road (today's Broadway). The map reference describes the "grist & sawmill of Hendrick Gerretson 1767" (at the number 3 on the map), though Lot 8 was originally granted to Hendric Spier. Eventually the lot and mills came into possession of Simeon Van Winkle, Cornelius Van Winkle, and Abraham Godwin.[9]

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[5] In Chesler, *New Jersey's Archeological Resources,* 209–210.

[6] William Nelson, ed., *Patents and Deeds and Other Early Records of New Jersey, 1664–1703* (first published 1899, reprint Baltimore, MD: Genealogical Publishing Co., 2000), 11, reference is to Liber 1, Folio 85.

[7] Liber 2, Part A, Folio 3, *New Jersey State Archives*.

[8] James and Jameson, *Journal of Jasper Danckaerts,* 176.

[9] Lisanne Renner, "From Farms to Factories: Two Centuries of Shaping Paterson's Urban Forms." *The North Jersey Highlander*, Vol. 33, 1997, 3; Nelson and Shriner, *History of Paterson*, 106. In September 1792, the Society for Establishing Useful Manufactures (S.U.M.) purchased about fifty acres of Lot 8 from Simeon Van Winkle, Abraham Godwin, and Cornelius Van Winkle, including a grist and saw mill ("Nicholas Low, Chairman of the Location Committee of S.U.M., to the directors," #197 and #198, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ).

Figure 16: Detail of Lot 8 from Map of Totowa and The Boght (Paterson Free Public Library)

Navigable waterways provided the most affordable transportation of heavy, bulky products. Development of road systems to connect interior Piedmont sections with the navigable waterways was an early priority. The 1679 plat of the Gotham Division of Acquackanonk (today's Passaic) indicated a road (Weasel Road, today's Lexington Avenue) serving as the center dividing line (see Figure 12). Acquackanonk (Passaic) was located at the head of the navigable waters of the Passaic River and Weasel Road likely serviced the settlements to the north and west. Lathrop's undated "Map of Totowa and The Boght," said to be "compiled from old records and map," shows this as part of "York Road," which turned west following division lines, passed Gerretson's mills, across the Passaic and turned south as "Totowa Road." Presumably this is the same road which appears on Thornton's 1706 "New Map of East and West New Jarsey" as "The Road from York to Delaware Falls" (today's Trenton; see Figure 8), below which the Delaware River was navigable.

Seeds of Revolution[10]

After the conclusion of the Seven Years War, known as the French and Indian War in the American colonies, England looked for ways to increase revenues to pay for the costly conflict, much of which took place in the colonies. Parliament put forth a series of income-producing measures in the form of taxes and duties on items sent to the American colonies. These provisions met with increasingly hostile resistance in the colonies, culminating with the American Revolution (or War for Independence).

One of the early revenue measures was the Stamp Act of 1765, by which Parliament imposed a tax on all paper used for printed documents. The Stamp Act Congress, convened by the colonies in October 1765, drafted resolutions in opposition to the Stamp Act, which appealed not to Parliament, but to the King for American colonists' rights and with the argument that taxes should not be imposed without representation. Parliament rescinded the Stamp Act in March of 1766, but at the same time passed the Declaratory Act, which affirmed the right of Parliament to enact any kind of legislation for the colonies that they chose.[11]

In 1767, Charles Townshend, the Chancellor of the Exchequer, proposed a set of three actions designed to produce revenue and curtail the increasingly intransigent colonies. Known collectively as the Townshend acts, they included the Revenue Act, which placed duties on imports of glass, lead, paper, paint, and tea; the Suspending Act, a suspension of the New York Assembly until it complied with the Quartering Act; and the creation of the American Board of Customs Commissioners to oversee American trade, headquartered in the colonies.[12] The response to this new attempt to tax the colonies was swift. Pennsylvania representative John Dickinson wrote his series, *Letters from a Farmer in Pennsylvania*(1767–1768), which called for unification of the colonies in opposition to the tax. In Boston, town leaders urged more local production of paper and glass, and supported reducing dependence on other imported products, calling lead, paint, and tea "superfluous."[13]

A defining moment for colonial unification came in February 1768, when the Massachusetts House of Representatives voted to distribute the Circular Letter to the other colonial assemblies. The Letter, like Dickinson's *Letters from a Farmer,* called for the colonial legislatures to respond as a united front: "It seems to be necessary that all possible care should be taken that the representatives of the several assemblies, upon so delicate a

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[10] Sections of the Revolutionary War context are paraphrased in part from the contexts developed for First State National Historical Park Historic Resource Study (Paula S. Reed and Edith B. Wallace, *First State National Historical Park, Delaware, Historic Resource Study,* September 2018).

[11] Robert Middlekauff, *The Glorious Cause: The American Revolution, 1763–1789* (New York: Oxford University Press, 1982), 124–125, 136.

[12] Middlekauff, *The Glorious Cause,* 150.

[13] Middlekauff, *The Glorious Cause,* 157.

point, should harmonize with each other."[14] The authors, James Otis and Samuel Adams, ended the Letter with the now oft-repeated complaint:

> that the Acts made there, imposing duties on the people of this province… are infringements of their natural and constitutional rights; because, as they are not represented in the British Parliament…[15]

It would become the rallying cry of rebellion: "no taxation without representation."

The New Jersey legislature was among the first to respond in unity with the Massachusetts sentiment, with a letter of support. Then on May 6, 1768, the New Jersey legislature sent a petition to the King to protest the taxation without representation.[16] In August 1769, New Jersey was represented at a Massachusetts gathering of the Sons of Liberty, a group which had established themselves as freedom-fighters during the 1765 Stamp Act uprising. John Adams recorded (in his personal journal) that at the August 'Festival, "Mr. [Joseph] Reed the Secretary of New Jersey" and Philemon Dickinson, both of Trenton, dined with him and "350 Sons of Liberty." The purpose of "these Festivals," wrote Adams, was to "tinge the Minds of the People" and "impregnate them with the sentiments of Liberty," though he observed that Reed and Dickinson were "cool, reserved and guarded all day."[17]

In 1770, Parliament repealed all the duties in Townshend's Revenue Act, except for the one on tea, which they left in place to affirm that they had the power and authority to set taxes as they saw fit. The retained tax on tea eventually led to the Boston Tea Party on December 16, 1773, in which colonial patriots dumped a shipment of English tea into the Boston Harbor rather than pay the tax. The act of defiance ignited a rebellious fire in the hearts of many colonials.[18]

In response to the destruction of tea in Boston Harbor, Parliament established the Coercive Acts—called the Intolerable Acts in America—to punish Massachusetts and to set an example for the other colonies. Among these acts was one closing the port of Boston, enforced by British troops. The colonies again united in their opposition, calling for a meeting of the First Continental Congress. In Essex County, New Jersey, locals called a public meeting of all "the free holders & Inhabitants of the County" to prepare a

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[14] "Massachusetts Circular Letter to the Colonial Legislatures; February 11, 1768," *Yale Law School, Lillian Goldman Law Library, The Avalon Project*, http://avalon.law.yale.edu/18th_century/mass_circ_let_1768.asp, accessed 3/14/2019.

[15] "Massachusetts Circular Letter"; Middlekauff, *The Glorious Cause*, 159–162.

[16] Middlekauff, *The Glorious Cause*, 161; *The Votes and Proceedings of the General Assembly of the Province of New-Jersey. 1761–68. 20th Assembly*, Session beginning April 12, 1768, page 39, https://archive.org/details/votesproceedings1761newj/page/n375, accessed 3/14/2019.

[17] "[August 1769]," Founders Online, National Archives, https://founders.archives.gov/documents/Adams/01-01-02-0013-0001. [Original source: *The Adams Papers, Diary and Autobiography of John Adams, vol. 1, 1755–1770*, ed. L. H. Butterfield. Cambridge, MA: Harvard University Press, 1961, pp. 338–342.]

[18] Middlekauff, *The Glorious Cause*, 227.

Resolution of unity with "our Sister Colonies on this alarming occasion." The Essex County men demanded repeal of the Acts, supported a boycott of British imports, and committed representatives to a gathering of all the New Jersey counties, including several Elizabeth-Town lawyers and Henry Garritse, a farmer from Acquackanonk.[19] Their Bergen County neighbors, largely of Dutch descent and typically more conservative in their politics, published a letter of support in May, "dreading a State of Anarchy and Confusion, which will necessarily attend the present struggle for our Liberty unless the proper steps are taken to preserve Regularity and Unanimity among us."[20] In July, county representatives from throughout the province of New Jersey met to issue similar resolutions as a united body and to appoint New Jersey delegates to the First Continental Congress.[21]

Though viewed as illegal by loyalists, the First Continental Congress, a gathering of representatives from twelve of the thirteen colonies (Georgia did not attend), met in Philadelphia in September and October of 1774. Six documents came out of this first meeting, including a list of grievances and a petition to the King. While some colonies continued to hold out hope for reconciliation with England, most already envisioned an independent post-colonial union. Compromise prevailed this time, though representatives called for a boycott of English goods shipped to American ports.

Alexander Hamilton was a student at King's College (later renamed Columbia University) in New York as these events unfolded. The Boston Tea Party prompted Hamilton's foray into public writing, first defending the rebellious act and later defending the Continental Congress against Tory loyalist attacks. His fiery style was in stark contrast to Thomas Jefferson's more-philosophical entreaties, notes historian John Ferling, but belied Hamilton's more conservative, conciliatory stance. With much of his training having been in the merchant trade, Hamilton believed Parliament was justly positioned to regulate commerce with the American colonies.[22] Still, in *A Farmer Refuted,* his answer to a Tory pamphlet by "A.W. Farmer," Hamilton appeared to be leaning toward revolution. "There is a certain enthusiasm in liberty," wrote Hamilton, predicting that Britain would not win a war in the American colonies. With an aspiring officer's eye, he noted that the American landscape did not favor the British Army because "there are no large plains for the two armies to meet in and decide the contest by some decisive stroke." Hamilton suggested Americans should adopt a strategy "to harrass and exhaust the soldiery, by frequent

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[19] "The Essex County Resolves on the Boston Port Act," *New Jersey in the American Revolution, 1763–1783: A Documentary History*, New Jersey State Library, accessed 3/15/2019, www.njstatelib.org/research_library/new_jersey_resources/highlights/american_revolution.

[20] "The Bergen County Association," *New Jersey in the American Revolution.*

[21] "The Resolves of the New Brunswick Convention," *New Jersey in the American Revolution*.

[22] John Ferling, *Jefferson and Hamilton: The Rivalry that Forged a Nation* (New York: Bloomsbury Press, 2013), 36–37. Hamilton was born and raised in the Danish West Indies. Orphaned at thirteen, he found work on St. Croix as a clerk in a trading firm that was based in New York (Ferling, 14–15).

skirmishes and incursions. . . "[23] As the colonies moved ever closer to rebellion against king and country, Hamilton would play an important role as soldier, while Jefferson would make his mark as politician.

A Second Continental Congress was scheduled to meet in May 1775. Just one month before that meeting, the war for American independence began when colonial militia and British soldiers clashed at Lexington and Concord in Massachusetts. As predicted by Hamilton, the American rebels calling themselves Patriots or Continentals faced a disciplined army which struggled with the terrain. The Patriots held their own in these first battles by the force of ardent patriotism and a warning system arranged by Paul Revere.[24] With the battles at Lexington and Concord still fresh, the Second Continental Congress once again produced documents attempting to seek reconciliation, but this time included the suggestion that the Americans were prepared for a long fight.[25]

Throughout the colonies, new provincial assemblies convened in direct defiance of the elected legislatures tied to the royally appointed governors. Local committees were assigned the task of electing delegates, disseminating information, and ferreting out loyalist pockets.

Northern New Jersey in the American Revolution

In May of 1775, opponents of New Jersey's royal government called a meeting of the Provincial Congress to push forward a non-conciliatory response to British oppression in Boston, Massachusetts. Like those created in other provinces, the assembly was in defiance of the established New Jersey legislature, which even as late as November 1775 resolved to support reconciliation with Great Britain.[26] However, support for reconciliation in New Jersey was waning.

Although northern New Jersey still contained a larger proportion of loyalists, Bergen, Essex, Morris, and Sussex Counties each had active committees and sent delegates to the Provincial Congress in May 1775. In Essex County, the "Freeholders and Inhabitants of Acquackanonk" were among the first municipalities in the region to respond to the call for delegates to the new Provincial Congress, calling a meeting on May 3, 1775. Among

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[23] "The Farmer Refuted, &c., [23 February] 1775," Hamilton Papers, *National Archives, Founders Online*, accessed 3/15/2019, https://founders.archives.gov/documents/Hamilton/01-01-02-0057.

[24] Middlekauff, *The Glorious Cause*, 267–273.

[25] "A Declaration by the Representatives of the United Colonies of North-America, Now Met in Congress at Philadelphia, Setting Forth the Causes and Necessity of Their Taking Up Arms." *Documents Illustrative of the Formation of the Union of the American States. Government Printing Office, 1927. House Document No. 398.* Selected, Arranged and Indexed by Charles C. Tansill, accessed 1/25/2018, http://avalon.law.yale.edu/18th_century/arms.asp.

[26] Minutes of the Provincial Congress and the Council of Safety of the State of New Jersey, 108–109; "The New Jersey Assembly Resolves Against Independence," *New Jersey in the American Revolution*.

those elected to the General Committee was Abraham Godwin, whose tavern attracted visitors to the Great Falls of the Passaic, and Henry Garritse, who was among the Essex men who had responded to the Intolerable Acts of 1773. Garritse was elected delegate to the "Provincial Convention," along with Robert Drummond, Michael Vreeland, and John Berry, all residents of Acquackanonk Township.[27]

In June 1775, the New Jersey Provincial Congress voted to raise a militia "for defending the cause of American freedom."[28] Abraham Godwin submitted his name for a commission in the New Jersey Militia, but was "set aside" when a member of the Congress was given the commission. Godwin instead obtained a captain's commission in the New York Militia in early 1776.[29] Abraham Godwin's New York creditor, a Tory loyalist, reportedly called in his debts as punishment for his support of the rebellion, for which Godwin sold much of his property to Jacob van Winkle, including the tavern at the Great Falls.[30]

On July 4, 1776, the Continental Congress approved the Declaration of Independence, creating a union of independent states formed from the former British colonies.[31] The British Army was backed by the most powerful navy in the world, making the coastal colonies vulnerable at the ports of entry. In August, the British took Long Island, and, after the American defenders' retreat, Manhattan.[32] In November, General George Washington's Continentals failed to hold Fort Lee on the west bank of the Hudson in northern New Jersey, despite reinforcements from Trenton, who crossed the Passaic on the Acquackanonk bridge.[33] The remaining months of 1776 saw the Americans retreat through Acquackanonk Township to Newark, then south to New Brunswick, Princeton, and Trenton, where they crossed the Delaware River into Pennsylvania.[34] In December, the British troops, under the command of Generals Howe and Cornwallis, went into winter quarters, stretched across New Jersey from New Brunswick to Trenton.

On December 24, General Washington famously ordered a surprise attack, crossing the Delaware River to Trenton by night and securing the town by morning. Continentals soon secured Princeton, Burlington, Elizabeth-Town, and Hackensack, settling in

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[27] Minutes of the Provincial Congress, 110.

[28] Minutes of the Provincial Congress, 179.

[29] Journals of the Provincial Congress, Provincial Convention, Committee of Safety and Council of Safety of the state of New-York: 1775–1777 (Albany: Printed by Thurlow Weed, printer to the State, 1842), 132, accessed 3/19/2019, https://archive.org/details/journalsofprovin02newy/page/436.

[30] Marcia Dente, *Paterson Great Falls: From Local Landmark to National Historical Park* (Charleston, SC: The History Press, 2012), 22.

[31] New Jersey adopted its Constitution on July 2, 1776. ("The Constitution of the State of New Jersey," *New Jersey in the American Revolution*)

[32] Middlekauff, *The Glorious Cause*, 340–346. Twenty-one year old Captain Alexander Hamilton commanded a New York artillery company that participated in the fight on Long Island and the narrow escape from Manhattan. (Ferling, *Jefferson and Hamilton*, 62–63)

[33] Nelson and Shriner, *History of Paterson*, 208.

[34] Middlekauff, *The Glorious Cause*, 354–355.

Morristown for the rest of the winter. The calculated move by Washington had the planned positive effect–at least temporarily–on bolstering the morale of his troops and the support of the New Jersey citizenry.[35]

Early in 1777, while still encamped in their Morristown winter quarters, General Washington requested Alexander Hamilton to serve as one of his aides-de-camp, a position he held through 1780.[36] An astute observer, Hamilton reported in April to the New York Provincial Congress that General Howe was loading British troops onboard transports "at the Hook [Sandy Hook], by way of Staten Island," speculating that their destination was likely Philadelphia.[37] It was not until June, however, that Howe's troops actually left New Jersey. Sailing around to the Chesapeake Bay the British pushed through Washington's defense and captured Philadelphia in September. While Howe wintered in the city, Washington's Continentals suffered through the 1777-78 winter of extreme cold and supply shortages at Valley Forge.[38]

Though the winter of 1778 was a difficult one for Washington's troops at Valley Forge, Benjamin Franklin's negotiations toward an alliance with France bore fruit. In a treaty signed in February 1778, France committed itself to "the independence of the United States," promising military aid after a French declaration of war against Britain. With England now fighting two wars, the Americans slowly began to gain the upper hand in the fight against the British Army. Taking the war into the southern colonies, the British struggled with an increasingly unconventional war, as American patriots engaged in less "conventional" warfare. The British suffered too from insufficient supplies as they moved inland away from supply ships.

The British troops who occupied Philadelphia removed in the summer of 1778, heading back to New York. Though Washington attempted to prevent it, his failure (or Gen. Charles Lee's failure) at Monmouth resulted in the renewed British occupation of New York.[39] Thus from June 1778 through 1780, American encampments concentrated in northern New Jersey, often passing through Acquackanonk, Totowa, and Pompton. In July 1778, the Continentals rested at Paramus after the Battle at Monmouth Court House. En route to join his troops, General Washington and his staff crossed the Passaic River "at an old bridge in very bad repair and in half a mile reached the falls," recalled one of his aides, James McHenry:

> After viewing these falls we seated ourselves round the General under a large spreading oak within view of the spray and in hearing of the noise. A fine cool

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35 Middlekauff, *The Glorious Cause,* 357–362.

36 Ferling, *Jefferson and Hamilton,* 67.

37 Journals of the Provincial Congress…New York, 436.

38 Middlekauff, *The Glorious Cause,* 365–391.

39 Middlekauff, *The Glorious Cause,* 424–427.

> spring bubbled out most charmingly from the bottom of the tree. The travelling canteens were immediately emptied and a modest repast spread before us, of cold ham, tongue and some biscuit. With the assistance of a little spirit we composed some excellent grog. Then we chatted away a very cheerful half hour and then took our leave of the friendly oak its refreshing spring and the meek falls of Pasaic less noisy and boisterous than those of Niagara, or the more gentle Cohoes or the waters of the Mohawk.[40]

Among those present at this pleasant picnic were several of Washington's aides, including McHenry and Colonel Alexander Hamilton, as well as the Marquis de Lafayette.

Leaving their 1779–80 winter quarters in Morristown in the summer 1780, Washington returned to the Great Falls of the Passaic first in July and again in October. There he established a large encampment of troops on the expansive open grounds north of the Falls. Historian William Nelson (1920) detailed the locations of the various brigades:

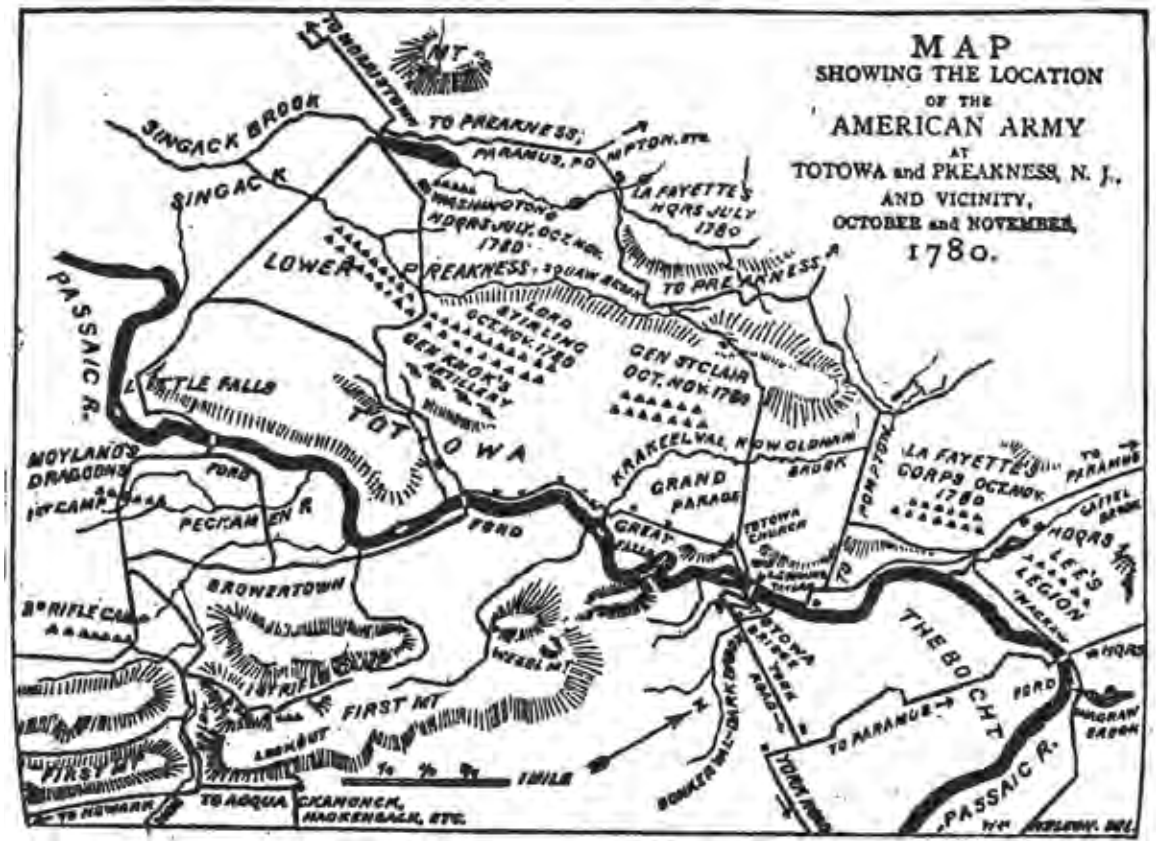

Figure 17: Map Showing the location of the American Army, 1780. (Nelson, History of Paterson, 236)

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[40] Bernard Christian Steiner, *The life and Correspondence of James McHenry, Secretary of War under Washington and Adams* (Cleveland: The Burrows Brothers Company, 1907), 22, accessed 3/26/2019, https://archive.org/details/jamesmchenry00steirich/page/20.

> On July 4, 1780, Washington had arrived from Ramapo with his army at Totowa, where he spread out his troops, while he established his head quarters in the handsome and spacious residence of Col. Theunis Dey, at Lower Preakness.... The main body of the army was encamped along the Totowa heights, near the Great Falls, the centre on the high ground back of the present Laurel Grove cemetery, the right toward Little Falls, and the left at or near Oldham (Haledon). Col. Stephen Moylan's Pennsylvania dragoons occupied an advanced position, at Little Falls, southeast of the river, toward the Notch. The Marquis de Lafayette had his headquarters at the grist-mill of Samuel Van Saun, near the race track at Lower Preakness, about a mile and a half north of Washington's headquarters.
>
> ... The broad plateau extending for half a mile or more from the mountain to the river, at an elevation of fifty to one hundred and fifty feet above the stream, not only afforded fine opportunities for exercising the troops in military evolutions, but was also well adapted for defensive purposes. The Grand Parade ground was near the Falls, on an extensive bare field, known and used eighty or ninety years later (1860–70) as the "Cricket ground," in the Totowa region of the present Second ward of Paterson (today's Vista Park).[41]

The encampment was in preparation for an attack on New York, a plan abandoned by the Americans when British ships entered the Hudson River. Instead, the troops moved again to winter quarters in Morristown.

General Washington's continued focus on New York from 1778 through 1780, despite increasing British pressure in the southern colonies, was largely due, according to Washington, to the failure of Congress to fund additional soldiers and supplies.[42] Writing to George Mason from his headquarters at "Passaic Falls," Washington complained that his volunteer army lacked food, clothing, "and shortly shall be (in a manner) without men." He suggested the need for "a permanent force, not a force that is constantly fluctuating and sliding from under us as a pedestal of ice would do from a statue in a summer's day" and a "means to aid our Taxes by Loans, and put our finances upon a more certain and stable footing than they are at present."[43]

General Washington's commitment to the war in the South improved in 1780 when he recommended that Congress appoint Nathanael Greene to command the Southern Department, and in early 1781, he sent Lafayette with 1,200 Continentals to support the fight in Virginia.[44] In October 1781, French and American troops laid siege to Yorktown,

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[41] Nelson and Shriner, *History of Paterson,* 235–237, 242.

[42] Ferling, *Jefferson and Hamilton,* 83.

[43] George Washington to George Mason, October 22, 1780, in Worthington Chauncey Ford, ed., *The Writings of George Washington, Vol. IX (1780–1782)* (New York: G. P. Putnam's Sons, 1891), *Online Library of Liberty,* accessed 11/11/2019, https://oll.libertyfund.org/titles/washington-the-writings-of-george-washington-vol-ix-1780-1782.

[44] Middlekauff, *The Glorious Cause,* 463; Ferling, *Jefferson and Hamilton,* 107.

Virginia, occupied by British regulars under the command of General Cornwallis. Though Cornwallis' surrender at Yorktown did not immediately end the war, it hastened efforts in England to bring the conflict to a conclusion. In the spring of 1782, representatives of the British government entered into peace talks with the American peace commission. The two parties signed a preliminary agreement in November 1782 and signed the Treaty of Paris on September 3, 1783.

Competing Political and Economic Visions for the New Nation

The peace agreement of 1783 established the United States of America as a nation recognized by Great Britain and other European governments and set official United States boundaries.[45] The United States confederacy was now free to govern itself. The Articles of Confederation and Perpetual Union, ratified by all thirteen states between 1777 and 1781, was considered by many, however, to be an imperfect governing document giving too much power to the individual states. Many, like Alexander Hamilton, believed a stronger central government would stabilize the United States' economy and improve prospects for the future.[46]

In his 1775 treatise, *A Farmer Refuted,* Alexander Hamilton mused on the economic potential of an independent America:

> Nature has disseminated her blessings variously throughout this continent: Some parts of it are favourable to some things, others to others; some colonies are best calculated for grain; others for flax and hemp; others for cotton; and others for live stock of every kind: By this means, a mutually advantageous intercourse may be established between them all. If we were to turn our attention from external to internal commerce, we should give greater stability, and more lasting prosperity to our country, than she can possibly have otherwise.[47]

In this pastoral view of commerce, it would appear that his thoughts aligned with Thomas Jefferson's vision of an American agrarian republic. Hamilton's attentions continued toward manufacturing, though in 1775 that was still largely composed of skilled mechanics in relatively small-scale shops:

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[45] Middlekauff, *The Glorious Cause*, 573–575.

[46] Middlekauff, *The Glorious Cause*, 598–600. The United States government under the Articles of Confederation also lacked an executive and judicial branch, and Congress was a single entity not directly elected by the people. (Middlekauff, 621).

[47] "The Farmer Refuted, &c., [23 February] 1775," Hamilton Papers, *National Archives, Founders Online*, https://founders.archives.gov/documents/Hamilton/01-01-02-0057, accessed 3/15/2019.

> But, it is said, we have no persons to manufacture our materials, after we have provided them. Among the swarms of emigrants, that have within these few years past, come to the continent; there are numbers of manufacturers, in the necessary branches. These, for want of encouragement in their own occupations, have been obliged to apply themselves to other methods of getting a living; but would be glad of an opportunity to return to them. Besides these, we should soon have a plenty of workmen, from Britain and Ireland: Numbers, who would be thrown out of employ there, would be glad to flock to us for subsistence. They would not stay at home and be miserable, while there was any prospect of encouragement here. Neither is there any great difficulty, in acquiring a competent knowledge of the manufacturing arts. In a couple of years many of our own people might become proficient enough, to make the coarser kinds of stuffs and linens.[48]

Even as late as 1789 Hamilton still acknowledged in his trade "conversations" with British government minister George Beckwith that the young United States was "rather an Agricultural, than a manufacturing people." However, Hamilton continued the conversation by leveraging American manufacturing potential:

> our policy has had a tendency to suggest the Necessity of introducing manufactures, which Accordingly have made some progress in Connecticut, where Cloth has been manufactured to some Extent, leaving already a clear profit of between six and seven per cent to the proprietors, and Pensylvania [sic] has gone further in her Exertions in different branches.[49]

Clearly, by the late 1780s, Hamilton understood the prospective economic power of American manufacturing.

Thomas Jefferson, on the other hand, was repelled by the new model of manufacturing, particularly after seeing firsthand the results of the Industrial Revolution in England and France in 1787. Jefferson feared a moral decline in "the mobs of the great cities" which would surely rise from industrialization. He wrote, "While we have land to labour then, let us never wish to see our citizens occupied at a work-bench, or twirling a distaff. Carpenters, masons, smiths, are wanting in husbandry: but, for the general operations of manufacture, let our work-shops remain in Europe."[50]

These fundamental differences of opinion extended to the role of the emerging United States government in the life of the American economy and the lives of American

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[48] "The Farmer Refuted, &c., [23 February] 1775."

[49] "Conversation with George Beckwith, [October 1789]," Hamilton Papers, *National Archives, Founders Online*, accessed 11/11/2019, https://founders.archives.gov/documents/Hamilton/01-05-02-0273#ARHN-01-05-02-0273-fn-0001-ptr.

[50] Thomas Jefferson, *Notes on the State of Virginia* (Philadelphia: Prichard and Hall, 1788), 175, Electronic Edition (2006), *Documenting the American South*, accessed 3/27/2019, https://docsouth.unc.edu/southlit/jefferson/jefferson.html#p174.

citizens. While Jefferson envisioned a Republic of strong state governments and a weak central government, Hamilton supported a strong Federal government with the power to levy taxes and to regulate interstate trade. His thoughts evolved through the war as he personally experienced the effect of Congress' inability to collect taxes, relying instead on state requisitions. Some states jealously reserved their tax receipts to support the state militias, resulting in perennial supply shortages within the Continental Army and delayed payments to the officers and soldiers.[51] Hamilton commented on the dangers of "A Want of Power in Congress," in his six essays written in 1781 under the title "The Continentalist." In his final installation, published on July 4, 1782, he declared the proposed Articles of Confederation inadequate for the needs of the new nation, giving "the appearance only of union" judged as "weak and insignificant. . . in the eyes of other nations." Hamilton concluded, "There is something noble and magnificent in the perspective of a great Federal Republic, closely linked in the pursuit of a common interest, tranquil and prosperous at home, respectable abroad."[52]

The shaky confederation of the United States struggled through the next four years. After the successful negotiations between Maryland and Virginia to regulate their interstate trade in 1786 and the tax revolt known as Shay's Rebellion in Massachusetts, Congress resolved in February 1787 to convene a full convention of state delegates to discuss a revision of the Articles of Confederation. The Constitutional Convention met in Philadelphia from late May through mid-September 1787. For nearly four arduous months, delegates from twelve of the thirteen states (Rhode Island was not represented) hammered out their vision of the new republic.

Popular representation (based on population figures) versus state representation in Congress remained one of the important points of debate through the first half of the convention, pitting the larger states—particularly Virginia, Pennsylvania, and Massachusetts—against the smaller states of Delaware, Maryland, New Jersey, and Connecticut. James Madison wrote of the debate in his record of the convention:

> The States of NJ & Del. were opposed to a National Govt. because its patrons considered a proportional representation of the States as the basis of it. . . . Some of the members from the small States wish for two branches in the General Legislature, and are friends to a good National Government; But would sooner submit to a foreign power than submit to be deprived of an equality of

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[51] Andrew Fagal, "State Power and Private Interest: The Challenge of Mobilization Policy in the Critical Period," *Conference of the Program in Early American Economy and Society Library Company of Philadelphia, 2016*, accessed 3/25/2019, http://librarycompany.org/Economics/2016conference/pdfs/PEAES%20--%20 2016%20conf%20--%20Fagal%20ppr.pdf; see also Alexander Hamilton, "The Continentalist No.1, [12 July 1781]," Hamilton Papers, *National Archives, Founders Online*, accessed 3/25/2019, https://founders.archives.gov/documents/Hamilton/01-02-02-1179.

[52] "The Continentalist No. VI [4 July 1782]," Hamilton Papers, *National Archives, Founders Online*, accessed 3/25/2019, https://founders.archives.gov/documents/Hamilton/01-03-02-0031.

> suffrage, in both branches of the legislature, and thereby be thrown under the domination of the large States.[53]

New Jersey delegate William Paterson submitted a proposal known as the New Jersey plan, in which each state would retain equal representation in Congress, which failed to pass.

The final resolution, known as the "Great Compromise," came in July, based upon a Connecticut delegation proposal. The House of Representatives would be popularly elected with "one representative for every 40,000 inhabitants, the count to reckon five slaves as three freemen," intended to satisfy both the larger states and the southern states. The Senate, elected by members of the House of Representatives, was to have equal representation for each state in the form of two senators, regardless of population, which satisfied the smaller states. The convention approved the compromise on July 16 by a narrow margin: Delaware, Maryland, New Jersey, Connecticut, and North Carolina in favor, Pennsylvania, Virginia, South Carolina, and Georgia opposed, with Massachusetts divided in its vote and New York unrepresented at the time of the vote.[54] Though there was still a great deal of work to do, with perhaps the stickiest of points now resolved, the delegates moved on to complete the task.

On September 17, 1787, the convention approved and signed a draft of the new Constitution. It would now go to the states for ratification, requiring nine of the thirteen to ratify before the document could go into effect.[55] The New Jersey ratification convention met in December 1787. John Chetwood, Samuel Hay, and David Crane sat as delegates from Essex County. The convention approved ratification in just six days and on December 18, 1787, New Jersey became the third state to ratify the new US Constitution.[56] Other states, like New York and Virginia where anti-Federalist arguments held sway, took more time. Alexander Hamilton, James Madison, and John Jay bolstered support for the

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[53] "Madison Debates, June 15," *The Avalon Project*, accessed 3/29/2019, http://avalon.law.yale.edu/18th_century/debates_615.asp#pat.

[54] Middlekauff, *The Glorious Cause*, 639–641. A later amendment to the Constitution would alter the Senate elections to popular votes. The Great Compromise was described in *The Federalist Papers*, essay number 62 titled "The Senate," (written by either Alexander Hamilton or James Madison) as "the lesser evil" given the competing principles of the larger states versus the smaller states. On a more positive note the writer pointed out the advantages likely to arise from the compromise: "that the equal vote allowed to each State is at once a constitutional recognition of the portion of sovereignty remaining in the individual States, and an instrument for preserving that residuary sovereignty. .. . Another advantage accruing from this ingredient in the constitution of the Senate is, the additional impediment it must prove against improper acts of legislation. No law or resolution can now be passed without the concurrence, first, of a majority of the people, and then, of a majority of the States." (Alexander Hamilton, John Jay, James Madison "The Federalist Papers," *American History from Revolution to Reconstruction and beyond*, accessed 8/16/2019, http://www.let.rug.nl/usa/documents/1786-1800/the-federalist-papers/)

[55] Middlekauff, *The Glorious Cause*, 648.

[56] "Convention Minutes," *New Jersey State Archives, Documentary Treasures*, accessed 3/29/2019, https://www.nj.gov/state/archives/docusconstitution.html.

Constitution in a series of essays known as *The Federalist*. By September 1788, the required nine states had ratified the Constitution and a new government was born.[57]

Alexander Hamilton and Tench Coxe: Developing the Independent American Economy

On August 13, 1788, Alexander Hamilton wrote a letter to the now-retired General George Washington, which included an implied request for Washington to serve as the new nation's first president: "You will permit me to say that it is indispensable you should lend yourself to its first operations." Though Washington replied that he wished only "to live and die, in peace and retirement on my own farm," he did in fact agree to serve.[58] Shortly after his inauguration, Washington tapped Hamilton to be the first US Secretary of the Treasury.

Alexander Hamilton came to the job with energy and extensive plans to create a firm financial foundation for the United States' federal government, focusing on "a central bank, a funded debt, a mint, a customs service, [and] manufacturing subsidies."[59] Among his first efforts was the establishment of a National Bank. In answer to his critics, Hamilton wrote in his final report that the public benefit of secure credit—secured by the federal government in part by deposits of gold and silver and by "the public debt"—was its vital role in promoting investment in the nation's economy. Specifically, Hamilton believed that the investments in "support of industry" would correct the "wrong balance of trade," a consequence of previous colonial status.[60] Many of his arguments had developed years earlier in 1781, in discussions with Robert Morris, the Philadelphia financier who helped establish the Bank of North America to support the war effort.[61]

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[57] "Observing Constitution Day," *National Archives*, accessed 4/1/2019, https://www.archives.gov/education/lessons/constitution-day/transcript.html.

[58] "George Washington to Alexander Hamilton, August 28, 1788," *Library of Congress*, accessed 4/1/2019, https://www.loc.gov/resource/mgw2.015/?sp=262&st=text; Ron Chernow, *Alexander Hamilton* (New York: The Penguin Press, 2004), 271.

[59] Chernow, *Alexander Hamilton*, 287.

[60] "Final Version of the Second Report on the Further Provision Necessary for Establishing Public Credit (Report on a National Bank), 13 December 1790," Hamilton Papers, *National Archives, Founders Online*, accessed 4/1/2019, https://founders.archives.gov/documents/Hamilton/01-07-02-0229-0003.

[61] Iolavera et al., "Great Falls Historic District, Special Resource Study," 12–15.

Figure 18: Alexander Hamilton, by Thomas H. Crawford (Library of Congress)

Hamilton's efforts focused on forging a financial system which would support American trade, land acquisition, and manufacturing. His *Report on Public Credit* was followed by a *Report on the Mint,* and finally, his *Report on Manufacturing.* Secretary Hamilton was aided by a staff of thirty-nine—the largest of the three newly created cabinet offices (Treasury, State, and War). Initially Hamilton employed his King's College friend William Duer as assistant secretary, a position from which Duer resigned within seven months amid rumors of speculative improprieties. Tench Coxe, who followed Duer as Hamilton's assistant secretary, would prove central to Hamilton's plan to advance American manufactures.[62]

Figure 19: Tench Coxe, Samuel Sartain print. (New York Public Library)

[62] Chernow, *Alexander Hamilton,* 291–294; 371–72; "From Alexander Hamilton to William Duer, [4–7 April 1790]," Hamilton Papers, *National Archives, Founders Online,* https://founders.archives.gov/?q=Volume%3A-Hamilton-01-06&s=1511311112&r=236, accessed 4/16/2019. Coxe was the grandson of Dr. Daniel Coxe, first proprietor of West New Jersey. See Coxe Family Papers, Collection 2049, "Background Note," Historical Society of Pennsylvania.

In January 1790, the US House of Representatives requested that Hamilton produce a *Report on Manufactures* as they currently existed in the United States and asked him to determine "the means of promoting such as will tend to render the United States independent of foreign nations for military and other essential supplies."[63] To aid in the research and preparation of the report, Hamilton hired Tench Coxe in May 1790. Coxe was the secretary of the Pennsylvania Society for the Encouragement of Manufacturers and the Useful Arts and a well-known author of articles propounding the importance of industry in the new American economy.[64] Coxe and Hamilton shared a deep frustration with Britain's protectionist policies, which prevented the export of the technology and skilled workers who could help build America's manufacturing sector.[65] While Hamilton's interest steered more to the investment and trade opportunities presented by American manufactures, Coxe's thoughts extended to the benefits that industry could bring to an equally agrarian society. Tench Coxe's vision essentially melded Hamilton's political (Federal) economy with Jefferson's agrarian republic, writing in 1787, "the produce of the southern states should be exchanged for such manufactures as can be made by the northern, free from impost."[66]

In the summer of 1791, Secretary Hamilton sent out official requests for information from the various states on the manufactures within their borders. He received detailed responses from the New England states, where industry already had a significant foothold in the region's economy. Of special interest was the report from Moses Brown, owner of the Rhode Island cotton mill trading as Almy and Brown. Brown had circumvented the British prohibition when he employed Samuel Slater to reproduce the state-of-the-art waterpower-driven spinning machines from the Arkwright Mills in England where Slater had been an apprentice. The resulting higher quality thread and increased production capabilities made this mill an example of Hamilton's vision for American manufacturing.[67] In contrast, the Mid-Atlantic States provided very little information. The single report from New Jersey detailed only the iron works located in the area of Morristown. Though the state featured ample waterpower sources and a long history of flour, grist, and fulling mills, larger-scale manufacturing had apparently not yet taken hold in New Jersey.

Tench Coxe, whose familiarity with the subject of manufacturing and trade would prove exceedingly useful, compiled the data from the state reports and prepared two initial

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[63] As cited in Arthur Harrison Cole, ed., *Industrial and Commercial Correspondence of Alexander Hamilton, Anticipating his Report on Manufactures* (Chicago: A.W. Shaw Company, 1928), xv–xvi, HathiTrust Digital Library, accessed 4/1/2019, https://babel.hathitrust.org/cgi/pt?id=wu.89094362027;view=1up;seq=11.

[64] Sylvester K. Stevens, "A Century of Industry in Pennsylvania," *Pennsylvania History*, Vol. 22, No. 1, 1955, 51, *JSTOR*, accessed 4/1/2019, https://www.jstor.org/stable/i27769556.

[65] Chernow, *Alexander Hamilton*, 372.

[66] Tench Coxe, "An Enquiry into the Principles on which a Commercial System for the United States of America Should be Founded," *Evans Early American Imprint Collection*, 21–22, accessed 4/11/2019, https://quod.lib.umich.edu/cgi/t/text/text-idx?c=evans;idno=N15882.0001.001;rgn=div1;view=text;c-c=evans;node=N15882.0001.001:4.

[67] Cole, Industrial and commercial correspondence of *Alexander Hamilton*, 71.

drafts of the *Report on Manufactures*. In Coxe's second draft, he began by summarizing what he believed to be the salient points for encouraging American manufactures:

> The expediency of encouraging manufactures in the United States, tho recently deemed very questionable, appears at this time to be generally admitted. The advantages of the Landholder in furnishing raw materials, subsistence, fuel and other supplies to the workmen—the support which the fisheries derive from them by their consumption of articles drawn from the ocean—the assistance given to external commerce by promoting the importation of raw articles and furnishing manufactured commodities for exportation—their favorable effects on population by inducing the emigration of foreign artists and laborers—the introduction of money by offering a new & promising field to capitalists of other nations—the promotion of individual industry & economy which naturally result from manufactures and particularly when engrafted upon an extensive agriculture—their encreasing and rendering more certain the means of defence and other articles of prime necessity and lastly the Reduction of the prices of convenient & essential supplies for public & private use, which has already taken place on the appearance of competition from the American manufacturer are among the considerations, which have produced more favorable opinions concerning this object.[68]

Though this paragraph did not appear in the final draft of the report, ensuing drafts prepared by Secretary Hamilton made clear that the two men collaborated on interpreting the data.[69] However, most scholars agree that it was Hamilton who penned the final report. Arthur Harrison Cole, editor of a compendium of Hamilton's manufacture-related papers, summarized the significant points drawn by Hamilton (and by extension, Coxe) in the December 1791 report submitted to Congress:

1. Manufactures promote a greater division of labor than agriculture, and "there is scarcely anything of greater moment in the economy of a nation than the proper division of labor." Thereby "an increase of productive industry is assured."

2. Manufactures lead to an extension in the use of machinery, and in this way "an artificial force" is in production brought to the aid of "the natural force of man."

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[68] "Tench Coxe's Draft of the Report on the Subject of Manufactures," Hamilton Papers, *National Archives, Founders Online*, accessed 4/16/2019, https://founders.archives.gov/?q=tench%20coxe%20second%20draft&s=1511311111&r=7.

[69] "Alexander Hamilton's Final Version of the Report on the Subject of Manufactures," Hamilton Papers, *National Archives, Founders Online*, accessed 4/16/2019, https://founders.archives.gov/?q=Hamilton%27s%20final%20report%20on%20manufactures&s=1511311111&r=6#ARHN-01-10-02-0001-0007-fn-0163-ptr; Jacob E. Cooke, "Tench Coxe, Alexander Hamilton, and the Encouragement of American Manufactures," *The William and Mary Quarterly* 32, no. 3 (July 1975): 369–392, https://www.jstor.org/stable/i305987.

3. They add to the productivity of the country by giving employment to "classes of the community not originally engaged in the particular business."

4. They encourage the immigration of foreign workmen.

5. They furnish "greater scope for the diversity of talents and dispositions which discriminate men from each other." And this proposition, it may be added, grew into a distinct and notable argument for protection, commonly spoken of in Hamilton's own phrase as the "diversity of talents" argument.

6. Manufactures afford "a more ample and various field for enterprise"; and "to cherish and stimulate the activity of the human mind by multiplying the objects of enterprise is not among the least considerable of the expedients by which the wealth of a nation may be promoted."

7. And, finally, the establishment of manufactures contributes to an "augmentation of the produce or revenue of the nation" through "creating, in some instances, a new, and securing in all a more certain and steady demand for the surplus produce of the soil" and here is the origin of another protective argument, the so-called "home market" plea, which in the hands of Henry C. Carey and others came to have exceptional influence in American thought.[70]

Though Congress did not immediately act on the recommendations laid out in the *Report of Manufactures,* Hamilton had already taken steps to enact his own manufacturing experiment.

[70] Cole, *Industrial and Commercial Correspondence of Alexander Hamilton,* 236–237.

Conclusion

US manufacturing and commerce emerged from America's war for independence already at a disadvantage from its colonial status under British rule. Restrictive legislation in Great Britain and other European countries compounded the problem, from ports closed to US shipping in England, France, and Spain, to lower shipping and interest rates for British companies, putting American commerce at a financial disadvantage. Britain had more skilled mechanics and unskilled laborers, with strict laws preventing them from removing themselves—and their knowledge of manufacturing processes—to the United States, where wages were higher. On the other hand, US agriculture and abundant natural resources were perfectly suited for manufacturing enterprises. American farms produced cotton and wool for textiles, American forges produced iron, and American rivers provided a cheap, accessible source of power. Early milling, mining, and ironwork laid the foundation for industrial development after the American Revolution. Both Alexander Hamilton, as Secretary of the US Treasury, and his able assistant Tench Coxe, saw the potential for US manufacturing as the anchor for a thriving US economy which would support—and be supported by—the vast agricultural potential of the United States.

In his position as Secretary of the Treasury, Alexander Hamilton was poised to facilitate the American Industrial Revolution. Hamilton sought to demonstrate the economic power of industry by establishing a manufacturing company which would supply a variety of products on a national scale. New Jersey would become the incubator for the project.

CHAPTER 3

The Society for Establishing Useful Manufactures, 1791–1799

> The more I have considered the thing, the more I feel persuaded that it will equally promote the Interest of the adventurers & of the public and will have an excellent effect on the Debt.
>
> Alexander Hamilton to William Duer
> April 20, 1791

Introduction

Even before the publication of the *Report on Manufactures* in December 1791, both Alexander Hamilton and Tench Coxe already had firsthand knowledge of investment associations for capitalizing manufactures. As early as 1789, Hamilton became an investor in the New York Manufacturing Society and was reportedly a "charter subscriber" in a Manhattan woolen factory.[1] Fourteen years earlier, in 1775, Tench Coxe invested with The United Company of Philadelphia for Promoting American Manufacturers. Described as "The first joint-stock company for textile manufacturers," the company initially did well but ceased operations during the British occupation of Philadelphia:

> In 1778 it was reorganized as the Pennsylvania Society for the Encouragement of Manufacturers and the Useful Arts, with [Samuel] Wetherill and Tench Coxe as the principals. It soon had four jennies with over two hundred spindles, a carding machine, and twenty-six power looms in one central factory, and was manufacturing cloth by thousands of yards.[2]

Though not long-lived owing to the American Revolution, the Pennsylvania Society was certainly at the forefront of American industrial development. No doubt Hamilton and Coxe's experiences with these early concerns influenced Hamilton's decision to establish the Society for Establishing Useful Manufactures (S.U.M.) as a state-chartered corporation.

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[1] Chernow, *Alexander Hamilton,* 371.

[2] Stevens, "A Century of Industry in Pennsylvania," 51.

American Corporations in the Late Eighteenth Century

Corporate charters were, and continue to be, in the purview of the state governments rather than the federal government. This appears to be a holdover from the colonial period, when royal governors and assemblies, as well as proprietors, granted charters, generally for the incorporation of municipalities, churches, and colleges, presumed to be sanctioned by the King and Parliament.[3] After the American Revolution, the practice continued under state governments, either through special legislative charters or statutes enacted to provide for "corporations by prescription."[4]

Like the early American joint-stock companies, late eighteenth-century corporations were a tool for capitalizing large projects which, at least ostensibly, served a public purpose.[5] Many of the undertakings capitalized by corporations were, in fact, public projects such as canals, bridges, and roads. But under the governance of a corporation, these public projects were privately-owned and subject to tolls or fees for public use. George Washington's Potowmack Navigation Company, chartered by Maryland and Virginia in 1784/85, was among the earliest such corporations.[6] Early manufacturing corporations, like the Beverly Cotton Manufactory chartered in Connecticut in 1789, advertised their primary public benefit as a source of employment for women and children. The state legislature agreed noting, "It is essential to the true interest of this Commonwealth, to encourage within the same, the introduction and establishment of such manufactures as will give the most extensive and profitable employment to its citizens."[7] Banks and insurance companies also took advantage of legislative charters by touting their public benefit, the Bank of North America being the first in 1781.[8]

Incorporation through state legislative charter was perhaps most attractive to investors because it provided an added layer of government-sanctioned protection. As early as 1770, George Washington "urged the advantage of getting legislative authority" to attract investors to their Potomac River navigation scheme:

> if the subscriptions were vested by the two legislatures, with a kind of property in the navigation… to be re-imbursed their first advances with a high interest thereon, by a certain easy toll on all craft… you would add thereby a third class

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[3] As cited in Joseph Stancliff Davis, *Essays in the Earlier History of American Corporations, No. I–III* (Cambridge, MA: Harvard University Press, 1917), 7.

[4] Davis, *Essays, No. I–III*, 7, n. 3.

[5] Pauline Maier, "The Revolutionary Origins of the American Corporation," in "Law and Society in Early America," special issue, *William and Mary Quarterly* 50, no. 1 (January 1993): 55, https://www.jstor.org/stable/i348492.

[6] Joseph Stancliffe Davis, *Essays in the Earlier History of American Corporations, Number IV* (Cambridge: Harvard University Press, 1917), 123.

[7] Davis, *Essays, No. IV*, 271.

[8] Davis, *Essays, No. IV*, 36.

> of men… I mean the monied gentry, who tempted by lucrative views would advance largely on account of the high interest.[9]

Washington noted that such public-private partnerships were common in England (still the mother country in 1770) among the canal and turnpike companies.

In the post-Revolution atmosphere of the 1780s, it was perhaps because incorporation was associated with the kind of government intrusion from which Americans had just fought to free themselves that only twenty-eight corporations received legislative charters. In the 1790s, under the influence of Washington's Federalist administration, with Hamilton at the helm of the Treasury, corporate charters surged to nearly three hundred.[10] Resistance continued among Jeffersonian Republicans, however, who viewed the legislated incorporations as giving an unfair advantage to the monied few over the hardworking farmers and artisans which formed the bulk of the American citizenry.

In concluding his *Essays in the Earlier History of American Corporations, Number IV,* Joseph Stancliffe Davis observed the following about incorporation:

> In certain fields it fully justified the sanguine hopes of its promoters and the public, and was a highly important factor in the country's progress. This was true notably in banking, insurance, bridge and turnpike building. In other fields, notably manufacturing and the improvement of inland navigation, it was a disappointment….[11]

In the case of Hamilton's S.U.M. experiment—an expansive manufacturing company unlike any envisioned in the United States—the initial outcome might have appeared to be a disappointment, but in the longer view, it accomplished many of the objectives they set out to achieve.

Prospectus and Charter of the Society for Establishing Useful Manufactures

Even before Congress commissioned Hamilton's *Report on Manufactures,* it appears a plan for the Society for Establishing Useful Manufactures (S.U.M.) was underway. Although most historians credit Alexander Hamilton with initiating the S.U.M. in 1791, it appears that Tench Coxe hatched a similar scheme a year earlier. On January 11, 1790, Tench Coxe signed an agreement with George Parkinson, an English weaver Coxe had

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[9] George Washington letter to Thomas Johnson, July 20, 1770, as cited in Corra Bacon-Foster, *Early Chapters in the Development of the Potomac Route to the West* (New York: Burt Franklin, reprint 1971), 19; Davis, *Essays,* 112.

[10] Jeremy Atack and Larry Neal, eds., *The Origins and Development of Financial Markets and Institutions* (New York: Cambridge University Press, 2009), 227.

[11] Davis, *Essays, No. IV,* 330.

enticed to immigrate to the United States. Parkinson brought with him "the Knowledge of all the Secret Movements used in Sir Richard Arkwright's Patent Machine," and agreed to design an improved model in a financial partnership with Coxe.[12]

Tench Coxe alluded to the idea of manufacturing on a large scale in his February 1790 letter to Secretary Hamilton, written in response to one of Hamilton's official inquiries. Noting that the idea of American manufactures had been "ridiculed" at home and abroad, Coxe continued:

> when they see a Manufacturing interest grow up in our Country in a ratio of advance unequalled by any thing but the rise of new lands and that the means of further improvement & final success have become matter of absolute demonstration here and that orders for certain Species of Goods are yearly decreas'd abroad, they consider the versatility, industry & capacity of our people in a very favorable point of light.[13]

In April 1790, Hamilton requested that Coxe accept an appointment as assistant secretary of the Treasury Department, rightly convinced of his potential "usefulness in that station."[14] It is likely that Coxe would have shared his manufactory scheme with Hamilton as their intense collaboration began in preparing the *Report of Manufactures*.[15] Ron Chernow, author of a 2004 biography of Alexander Hamilton, states that it was not until April 1791 that "Hamilton had lent his prestige to Coxe's plan for a manufacturing society."[16] Indeed, a reference to the scheme appeared in the third draft of the *Report on Manufactures* later that year: "An association however has lately been set on foot to carry on the cotton branch with a force of capital and means which with the due countenance of government can hardly fail of success and which promises an acquisition of incalculable value to the United States."[17]

Tench Coxe's association with the scheme appears to have faded as Hamilton took on the project with enthusiasm. Hamilton quickly enlisted his friend William Duer, well-known among the monied men interested in corporate stock speculation, to raise the profile of the S.U.M. as an investment opportunity.[18] By April 29, 1791, there were already

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[12] As cited in Cooke, "Tench Coxe, Alexander Hamilton, and the Encouragement of American Manufactures," 381; see also Chernow, *Alexander Hamilton*, 372.

[13] "To Alexander Hamilton from Tench Coxe, [February 1790]," Hamilton Papers, *Founders Online: National Archives*, accessed 4/11/2019, https://founders.archives.gov/documents/Hamilton/01-26-02-0002-0178.

[14] "From Alexander Hamilton to Tench Coxe, 1 May 1790, Hamilton Papers, *Founders Online: National Archives*, accessed 4/11/ 2019, https://founders.archives.gov/documents/Hamilton/01-06-02-0262.

[15] See Davis, *Essays, No. I–III*, 356.

[16] Chernow, *Alexander Hamilton*, 372

[17] "Alexander Hamilton's Third Draft of the Report on the Subject of Manufactures, 1791," Hamilton Papers, *Founders Online: National Archives*, accessed 4/11/2019, https://founders.archives.gov/documents/Hamilton/01-10-02-0001-0005.

[18] Davis, *Essays, No. I–III*, 271.

forty-one subscribers to the company and a plan to pursue a corporate charter from the state of New Jersey. Nine men were assigned the task of acquiring the charter: Elias Boudinuot, Herman Le Roy, William Constable, Phillip Livingston, Nicholas Low, Richard Platt, Matthew McConnell, Blair McClenaghan, and William Duer.[19]

In August 1791, while the efforts in the New Jersey legislature were underway, Hamilton produced a prospectus for the S.U.M., drawing heavily on the concepts included in his *Report on Manufactures,* still in draft form. "To effect the desired association an incorporation of the adventurers must be contemplated as a mean necessary to their security," wrote Hamilton, continuing with his reasoning for targeting New Jersey as the state of choice. "It is thickly populated—provisions are there abundant and cheap. The state having scarcely any external commerce and no waste lands to be peopled can feel the impulse of no supposed interest hostile to the advancement of manufactures. Its situation seems to insure a constant friendly disposition."[20] US Securities and Exchange Commission (SEC) staffer James Lopez identifies the S.U.M. prospectus as America's first "initial public offering" or IPO. According to Lopez, it addressed many of the elements required by the SEC for modern IPOs, including price, a business description, and the risk involved for investors.[21]

Published in September 1791 in at least four Philadelphia newspapers and one in Boston, the prospectus provided details of capitalizing the company at $500,000 through the sale of 5,000 shares of stock at $100 per share. The initial risk to investors was mitigated by the statement that, "no subscriber shall be bound to pay until an Act of Incorporation shall have been obtained." Hamilton identified "dearness of labour" as another risk factor in the prospectus, which he addressed, according to Lopez, with the statements referencing emigrant labor and that "women and even children in the populous parts of the Country may be rendered auxiliary to undertakings of this nature."[22]

The business description detailed a company led by a stockholder-elected board of thirteen directors, who would then elect a governor and deputy governor from among the thirteen. The plan allowed for the hiring of a superintendent to oversee the construction and running of the works. The description included an expansive plan for the future manufactures expected to operate under the S.U.M. umbrella:

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[19] "Subscribers of Stock. To S.U.M.," #7, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ. Apparently, neither Alexander Hamilton nor Tench Coxe ever purchased stock in the company.

[20] "Prospectus of the Society for Establishing Useful Manufactures, [August 1791]," Hamilton Papers, *Founders Online: National Archives*, accessed 4/19/2019, https://founders.archives.gov/documents/Hamilton/01-09-02-0114.

[21] James Lopez, "Taking the Stand, Corporate Disclosure in 1791: How Does America's First IPO Disclosure Compare to Today's Prospectus?" *Washington Lawyer*, October 2013, accessed 7/23/2019, www.dcbar.org/bar-resources/publications/washington-lawyer/articles/october-2013-taking-the-stand.cfm.

[22] "Prospectus"

> Paper and Pasteboard, Paper hangings, Sail cloth and other coarse linen cloths, such as sheetings, shirtings, diaper, oznaburgs &ca., The printing of Cottons and linens; and as incident to this but on a smaller scale the manufacturing of the article to be printed, Womens shoes of all kinds, Thread, Cotton and Worsted Stockings, Pottery and Earthen Ware, Chip Hats, Ribbands & Tapes, Carpets, Blankets, Brass and Iron wire, Thread and Fringes. . . .

Adding, "a brewery for the supply of the manufacturers, as a primary object, may be thought of." All would be laid out in a "district within a certain defined limit which shall be chosen by the Company as the principal seat of their factories. . . . A part of this ground divided into town lots may be afterwards a source of profit to the Company."[23]

New Jersey governor William Paterson, who himself was a subscriber to the S.U.M. and namesake for the planned company town called Paterson, helped to push the legislation for incorporation through. On November 22, 1791, the New Jersey legislature passed "An Act to Incorporate the Contributors to the Society for Establishing Useful Manufactures, and for further Encouragement of the said Society."[24] The charter, which closely followed the wording of the prospectus, provided the company with a generous tax relief package. The Society's land was exempt from state property taxes, while manufacturers "in the immediate Service of the said Society" were exempt from "Poll and Capitation Taxes, and Taxes on their respective Faculties or Occupations," and exempt from "General Assessments upon their Persons, Faculties or Occupations." It gave the power of eminent domain for construction of "inland waterways," allowed additional capital to be raised through lotteries (to make up for expected initial losses), and included a $10,000 subscription by the state of New Jersey.[25]

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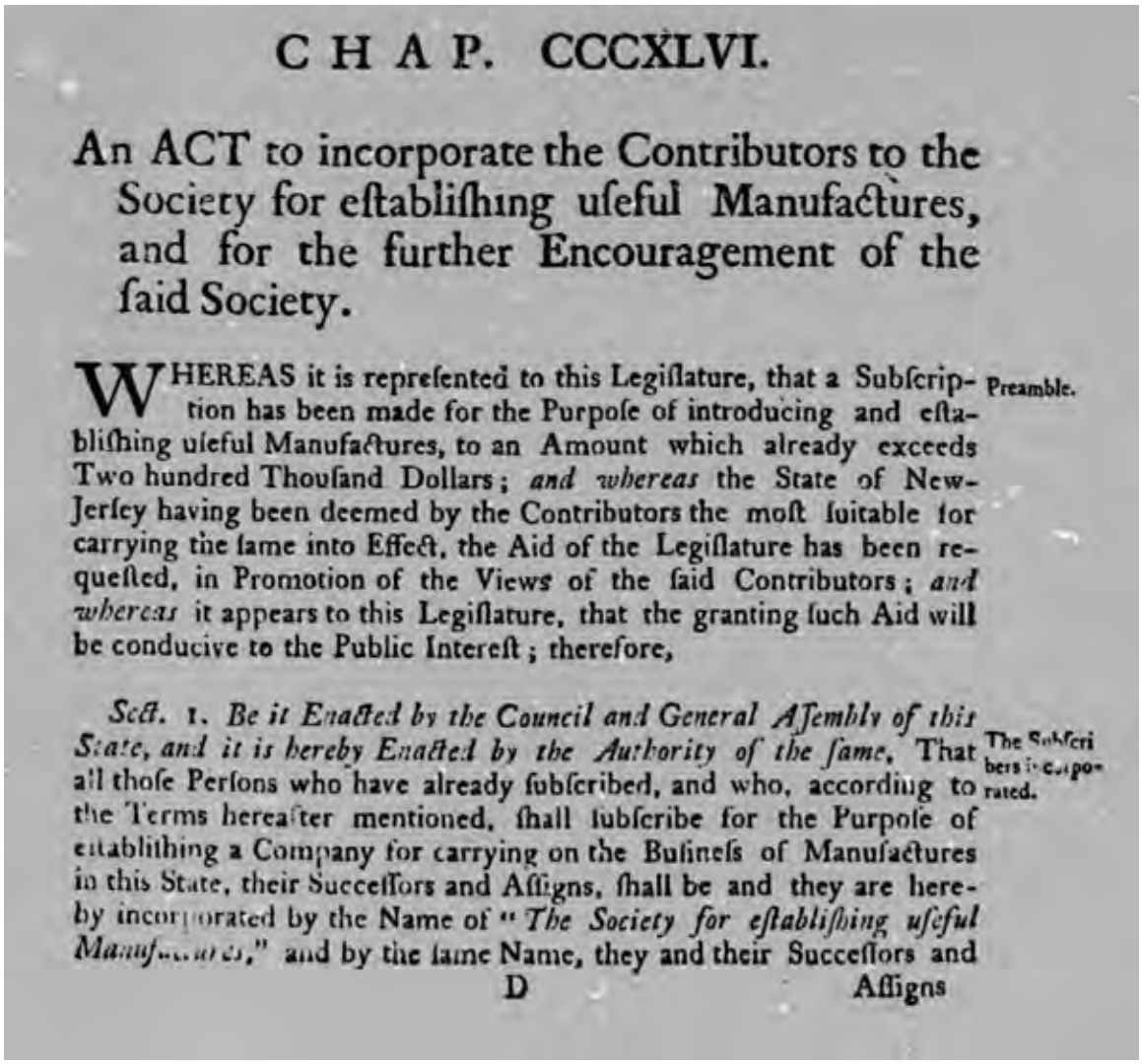
[23] "Prospectus"

[24] New Jersey Legislature, *Acts of the Sixteenth General Assembly of the State of New-Jersey* (Burlington: Printed by Isaac Neal, 1791), "New Jersey Session Laws Online," *Rutgers Law Library*, accessed 7/23/2019, http://njlaw.rutgers.edu/collections/njleg.

[25] Chernow, *Alexander Hamilton*, 373; Peskin, *Manufacturing Revolution*, 114. It is said to be one of the most generous incorporation charters ever given by a state. The tax relief package may be seen as a way to reduce the cost of new manufacturing to make it more competitive with established companies, both in the United States and abroad.



CHAP. CCCXLVI.

An ACT to incorporate the Contributors to the Society for eſtabliſhing uſeful Manufactures, and for the further Encouragement of the ſaid Society.

WHEREAS it is repreſented to this Legiſlature, that a Subſcription has been made for the Purpoſe of introducing and eſtabliſhing uſeful Manufactures, to an Amount which already exceeds Two hundred Thouſand Dollars; *and whereas* the State of New-Jerſey having been deemed by the Contributors the moſt ſuitable for carrying the ſame into Effect, the Aid of the Legiſlature has been requeſted, in Promotion of the Views of the ſaid Contributors; *and whereas* it appears to this Legiſlature, that the granting ſuch Aid will be conducive to the Public Intereſt; therefore, Preamble.

Sect. 1. *Be it Enacted by the Council and General Aſſembly of this State, and it is hereby Enacted by the Authority of the ſame,* That all thoſe Perſons who have already ſubſcribed, and who, according to the Terms hereafter mentioned, ſhall ſubſcribe for the Purpoſe of eſtabliſhing a Company for carrying on the Buſineſs of Manufactures in this State, their Succeſſors and Aſſigns, ſhall be and they are hereby incorporated by the Name of "*The Society for eſtabliſhing uſeful Manufactures,*" and by the ſame Name, they and their Succeſſors and Aſſigns The Subſcribers incorporated.

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Figure 20: Detail of New Jersey incorporation Act. (Rutgers Law Library)

Not everyone was so enthusiastic about the concept for the S.U.M.; in fact there was active and vocal opposition to the publicly chartered "national manufactory." Many saw the scheme as an affront to the traditional manufacturing trades:

> To none is the present period of more consequence than the mechanic; already have monopolies been established at his expense, and should the plans of the secretary of the treasury be executed, they will engulph within their destructive bosom every useful art.... What will be the fate of any private manufacturer, who shall see a national manufactory rising into existence, whose workmen shall receive the smiles of government, and have exclusive privileges, such as exemption from militia duty &c? Is not this striking at the root of his subsistence? Fellow citizens, beware....[26]

[26] As cited in Davis, *Essays, No. I–III,* 438.

Philadelphia physician George Logan, president of the "Germantown society for promoting domestic manufactures," sought to encourage the small-scale artisan manufactures championed by Thomas Jefferson. Logan provided the most prominent voice of the opposition in his pamphlet entitled "Five Letters Addressed to the Yeomanry of the United States: Containing Some Observations on the Dangerous Scheme of Governor Duer and Mr. Secretary Hamilton, to Establish National Manufactories. By a Farmer." Logan objected particularly to the prospect of the American aristocracy gaining legal advantage over "rights of the great body of yeomanry," concluding in his Letter IV:

> We ought not to desire the establishment of any kind of manufacture in our country, which cannot support itself, without government granting to its agents bounties, premiums, and a variety of exclusive privileges, in violation of the rights of the people.[27]

The core of the arguments, which centered opposition to government grants of privilege to capitalists and its detrimental consequences on the rights of the average American citizen (the yeomanry), followed the lines of argument in the political debates of Jefferson and Hamilton. Joseph Stancliffe Davis notes however, that it was not strictly "a partisan attack" or protest against class privilege, but was rooted in "the lurking antagonism against England and things English, for this followed English precedents, and the normal reaction against conspicuous innovations," concluding, "one cannot wonder that the published criticisms touched a responsive chord in many hearts."[28]

The First Year of the S.U.M.: Location, Location, Location. . .

Work on the actual operations of the S.U.M. began even before the prospectus was released or the charter acquired. In August 1791, a group of initial subscribers meeting in New Brunswick, New Jersey, authorized Hamilton "to procure artisans for directing the cotton manufacture."[29] However, it appears that Hamilton had already put George Parkinson (originally recruited by Tench Coxe) to work as early as April. Parkinson had recently received one of the first US government patents for his flax mill based upon British designs and Hamilton engaged him to supervise the planned cotton manufactory.[30] On July 19, 1791, Hamilton received a letter from Thomas Marshall, who declared himself a former

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[27] Davis, *Essays, No. I–III,* 442.

[28] Davis, *Essays, No. I–III,* 451.

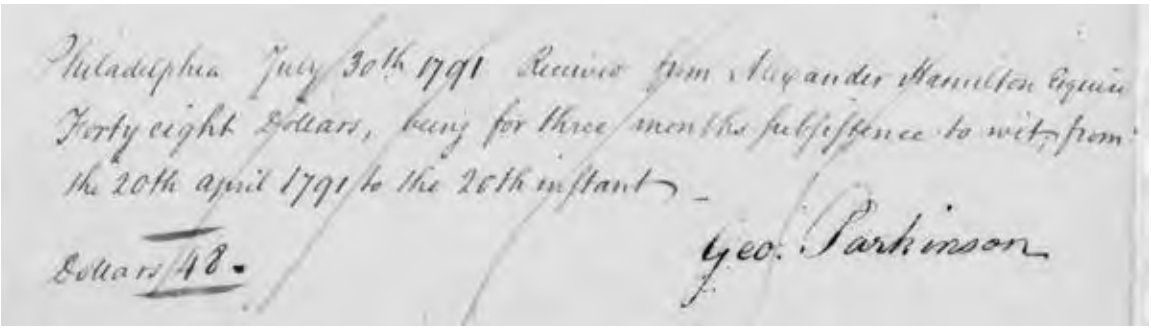
[29] Davis, *Essays, No. I–III,* 374.

[30] "Alexander Hamilton Papers: Financial Papers, 1782–1804," accessed 4/18/2019, http://hdl.loc.gov/loc.mss/ms003014.mss24612.0767; Chernow, *Alexander Hamilton,* 372, 374.

employee of Sir Richard Arkwright and builder of "the Cotton Mill in all its branches for a Mr. Callaway of Canterbury, Kent." Marshall promised not only his skills, but also the skills of others still in England:

> The foreman of his Weaving business I am in treaty with and only waits my Letter for to join me, so that the whole Business of Carding, Drawing, Roving, Spinning, Bleaching, and Weaving, can be conducted under one firm, and this, Sir, I pledge myself equal to, and Capable of, and shou'd I be fortunate enough to be honor'd with your Confidence in the Undertaking, nothing shall be wanting to Establish and Speedily bring to its utmost perfection in its fullest Extent the whole of the above Business's, and entertain no doubts but I can quickly Accomplish it.[31]

By the end of August, Hamilton had contracted with four mechanics, including Marshall to "superintend the Cotton Mill," "William Hall, as Superintendent of the Printing business, with Joseph Mort as an assistant in the Manufactory," and "William Pearce who has been employed by me in preparing Machines for the use of the Society."[32]


Philadelphia July 30th 1791 Received from Alexander Hamilton Esquire Forty eight Dollars, being for three months subsistence to wit, from the 20th april 1791 to the 20th instant —

Dollars 48 — Geo. Parkinson

Figure 21: $48 to George Parkinson from Alexander Hamilton, July 30, 1791. (Library of Congress)

Through much of 1791, interested parties—mostly landowners—submitted suggestions for potential sites for the factory complex along a number of New Jersey's rivers and creeks. In August 1791, Hamilton dispatched Hall and Mort to review the various sites. In his letter reports, Hall described the advantages and disadvantages of each location, concluding that the Great Falls of the Passaic affords "one of the finest situations in the world."[33] The Passaic's advantages, according to Hall, included plenty of water and good fall, adjoining level ground "not subject to inundation nor exposed to violent winds."

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[31] "To Alexander Hamilton from Thomas Marshall, 19 July 1791," Hamilton Papers, *Founders Online: National Archives*, accessed 4/19/ 2019, https://founders.archives.gov/documents/Hamilton/01-08-02-0504.

[32] "Directors Minutes, S.U.M., Vol. 1, Part 1," 3, S.U.M. Collection, Paterson Museum, Paterson, NJ. The contract with William Pearce was still under negotiation at the time of Hamilton's report to the directors in December 1791.

[33] "Joseph Mort and William Hall, New York, N.Y., to the committee of S.U.M.," #12, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

Abundant building material, both wood and stone, were also found to be readily available, and though located seven miles above navigable water at Acquackanonk, "navigation can, with care, be made complete all the way to the falls."[34]

Hall and Mort's report precipitated a more in-depth review of potential sites in New Jersey by Thomas Marshall, whose technical understanding of the hydraulic requirements appeared to be more advanced:

> The grand Object in this point is Water, and too much precaution and Circumspection in this particular is Impossible, especially upon the very Extensive scale at present Contemplated; for if there is not a regular and constant Supply of Water in the driest of Seasons Sufficient to work the Mill 23 hours pr Day, the Interest of the Subscribers will severely suffer. To prevent this, Sir, it will be Necessary to be Acquainted with the Source (if easily possible) of the River, the Situation of the Country through which it runs, the Number of other streams that empty themselves into it, and from whence or by what means they are supplied. From these and Similar Observations together with the best Information that can be obtained from those who have long known the River & its particularities, a Judgment may be form'd what Effect a Dry or Wet Season has on it; that is, Sir, wether in a drought there will be a Sufficiency of Water to Supply the Works, and when heavy or continued rains happen, what Effects are to be Apprehended either from its Overflowing, or the Accumulated Impetuosity of its Current, which if not known and guarded against may prove totally destructive to the Buildings. Next fixing on a place where the Natural Current, (within a reasonable distance) is not impeded by Mills, Bridges, Projections or Eddies: the Speed of the Water must be taken (by which the Interior heavy Wheels are regulated) together with the Quantity of Water it is capable of delivering in a given time: the Fall must likewise be measured.[35]

Marshall was dispatched on his tour of the same potential sites in September 1791, reporting his findings in letters to Tench Coxe.[36] Marshall noted that he made a special effort "to divest myself of every Prejudice or Attachment Whatsoever to any particular Place," so that he could make a fair assessment. He quickly concluded that the Delaware River at Trenton, the Assanpink, Mill Stone, and Stoney Brook did not meet his criteria. He found a location on "Second River" (Watsessing River) near Newark to be the most favorable.[37]

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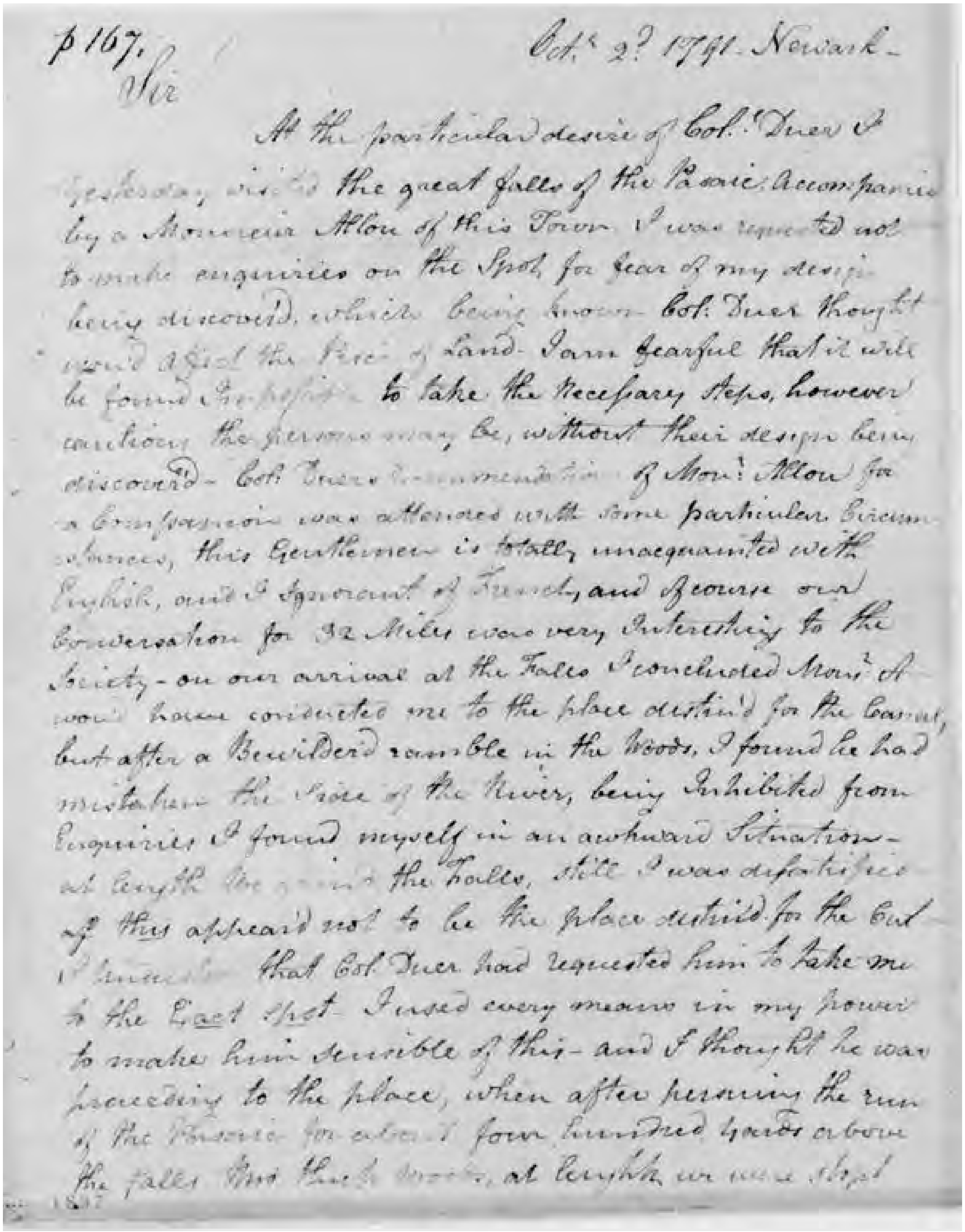
[34] "Joseph Mort and William Hall, New York, N.Y., to the committee of S.U.M.," #12, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[35] "To Alexander Hamilton from Thomas Marshall, [24–31 July 1791]," Hamilton Papers, *Founders Online: National Archives*, accessed 4/23/2019, https://founders.archives.gov/documents/Hamilton/01-08-02-0517.

[36] Coxe was at that time engaged at the Treasury Department helping Hamilton complete the *Report on Manufactures*. Cole notes that Coxe "seemed to have no private interest of stake in the S.U.M." (Cole, *Industrial and Commercial Correspondence of Alexander Hamilton*, 208). However, in Marshall's report to Coxe on his impressions of "Little River" he states: "as I am not positive in this point, I do not wish to Injure any favourable impression Col. Hamilton or Yourself [Coxe] May have for this Situation." (Cole, 212)

[37] Cole, *Industrial and Commercial Correspondence of Alexander Hamilton*, 208–214.



p 167. Oct.r 2d 1791 Newark—

Sir

At the particular desire of Col.l Duer I yesterday visited the great falls of the Passaic. Accompanied by a Monsieur Allou of this Town. I was requested not to make enquiries on the Spot, for fear of my design being discovered, which being known Col. Duer thought would affect the Price of Land. I am fearful that it will be found impossible to take the Necessary steps, however cautious the persons may be, without their design being discovered— Col. Duers recommendation of Mons.r Allou for a Companion was attended with some particular Circumstances, this Gentleman is totally unacquainted with English, and I Ignorant of French, and of course our Conversation for 32 Miles was very Interesting to the Society— on our arrival at the Falls I concluded Mons.r A would have conducted me to the place destined for the Canal, but after a Bewildered ramble in the Woods, I found he had mistaken the side of the River, being Inhibited from Enquiries I found myself in an awkward Situation— at length we gained the Falls, still I was dissatisfied as this appeared not to be the place destined for the Cut I [illegible] that Col. Duer had requested him to take me to the Exact Spot. I used every means in my power to make him sensible of this— and I thought he was proceeding to the place, when after pursuing the run of the Passaic for about four hundred yards above the falls thro thick woods, at length we were stopd

Figure 22: Thomas Marshall to Alexander Hamilton, Oct. 2, 1791. (Library of Congress)

Just days after Marshall's September 27 letter to Coxe, he wrote to Hamilton concerning his visit to "the great falls of Passaic," apparently arranged at the request of William Duer. Writing from Newark, New Jersey, Marshall noted that "Monsieur Allou of this town," who apparently spoke only French, accompanied him on the visit.[38] Presumably, Monsieur Allou was trained in engineering, or at least aspired to it, and he apparently worked with William Duer to design a still-secret plan to bring water from the Great Falls via canal to a site called Vreeland's Point at Acquackanonk (later Passaic). Duer wished to have Marshall assess the Great Falls location for his plan, accompanied by Allou as his guide, though it appears Monsieur Allou had never actually visited the Falls previously:

> on our arrival at the Falls I concluded Mons[r] A wou'd have conducted me to the place destin'd for the Canal, but after a Bewilder'd ramble in the Woods, I found he had mistaken the side of the River, being Inhibited from Enquiries I found myself in an awkward Situation—at length We gaind the Falls, still I was dissatisfied as this appear'd not to be the place destin'd for the Cut—I understood that Col. Duer had requested him to take me to the Exact spot—I used every means in my power to make him sensible of this—and I thought he was proceeding to the place, when after pursuing the run of the Pasaic for about four hundred Yards above the falls, thro' thick woods, at length we were stopt as we found them Impenetrable any further.[39]

The exasperated Marshall declared, "I must confess Sir, I found myself much at a loss how to Account for the events of this Day." Despite this, Marshall noted that from what little he had actually seen, he believed the canal scheme was possible, though navigation would be troublesome in the winter. Marshall was more reserved concerning Allou's cost estimate of £2000. "I have some reasons to differ in opinion… as far as concerns Expense," he wrote, suggesting to Hamilton, "the Expense attending the Canal and making the Pasaic Navigable for such a distance are Objects Sir that I respectfully recommend for your Consideration." Still, he appeared to be impressed with the Great Falls location, concluding, "I am of the Opinion it will be found to be the best Situation, that is Sir, it will have more water, & the Land may be had cheaper here than at Second River."[40]

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[38] "Thomas Marshall to Alexander Hamilton," October 2, 1791, *Alexander Hamilton Papers: General Correspondence, 1734-1804; 1791, Sept.–Oct. 10,* Manuscript/Mixed Material, accessed 4/23/2019, https://www.loc.gov/item/mss246120022/; also as cited in Cole, *Industrial and Commercial Correspondence,* 214. Most historians use the name "Allon," which appears to be a mis-transcription, and call him a French engineer, though there appears to be no documentation for his background. In 1811, "Monsieur Allou" was the proprietor of a private boarding school for girls in Newark, New Jersey, in which "the French language only is spoken." (Timothy Alden, *Alden's New Jersey Register…1811* (Newark: Printed by William Tuttle, 1811), 107, accessed 4/23/2019, https://archive.org/details/aldensnewjerseyr1811alde/page/n6).

[39] "Thomas Marshall to Hamilton, on a Mill Site," Oct. 2, 1791, as cited in Cole, *Industrial and Commercial Correspondence,* 215.

[40] "Thomas Marshall to Hamilton, on a Mill Site," Oct. 2, 1791, as cited in Cole, *Industrial and Commercial Correspondence,* 215.

On December 9, 1791, the S.U.M. Board of Directors convened their first meeting, just one week after their election by the stockholders. The thirteen included William Duer, John Dewhurst, Benjamin Walker, Nicolas Low, Royal Flint, Elisha Boudinot, John Bayard, John Neilson, Archibald Mercer, Thomas Lowrey, George Lewis, Moore Furman, and Alexander McComb. The board elected William Duer as governor and Archibald Mercer as deputy governor. Among their first actions was to approve the contracts which Hamilton had arranged with Marshall, Hall, Mort, and Pearce.[41] They allocated funds for acquiring foreign workers and machinery. Additionally, the board assigned a committee the task of locating the site for the manufactory.[42]

In the meantime, as the newly elected Governor of the S.U.M. Duer decided to move forward with his canal plan, now known as the "Duer-Allon Plan," even before approval by the Board of Directors. Stretching seven miles from its water source at the Great Falls of the Passaic to the head of navigation at Vreeland's Point near Aquackanonk (Passaic) where he planned to build the S.U.M. manufactories. Duer likely saw the canal and factory development as an opportunity to engage in land speculation. Already his agent Samuel Ogden, an early S.U.M. subscriber, had purchased options for land along the canal route. However, Duer's penchant for speculation, particularly in bank stocks, would soon be his downfall. In April of 1792, he lost everything in a speculative crash of his own making known as the Panic of 1792. Several other members of the S.U.M. board were also deeply involved in the speculation and suffered significant losses, but William Duer landed in debtor's prison, where he died in 1799.[43]

William Duer's disgrace, along with the other S.U.M. directors most directly involved—Macomb, Dewhurst, and Flint—would affect the S.U.M. in several ways. First, and foremost, the loss of actual cash to the tune of about $67,000 which had been in the hands of the governor and directors at the time of their bankruptcies. Second, the company suffered a loss of subscriber—and public—faith in the S.U.M. There was also concern for the loss of time in selecting a site and building the waterworks and mill buildings. The remaining directors turned immediately to Alexander Hamilton for direction, "It is natural for us in the present situation of the business, to look up to you as the founder of the institution," and Hamilton did not disappoint them. On April 16, 1792, Hamilton responded:

> The following appears to me to be the course proper to be pursued—
>
> To appoint the proper officers of the Institution and regulate their duties. I mean a Superintendent, an Accountant, and a Cashier; especially the first. Tis impossible that anything can proceed with vigour or efficiency till this is done.

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[41] "Directors Minutes, S.U.M., Vol. 1, Part 1," 3, S.U.M. Collection, Paterson Museum, Paterson, NJ.

[42] Davis, *Essays, No. I–III*, 403–407.

[43] Russell Fries, *Great Falls SUM Power Canal System*, HAER NJ 2, 1974/1983, 13, Library of Congress.

> An infinite deal depends on the qualifications of the Superintendent. If Mr. Hubbard was recoverable, no pains should be spared to effect it—If this is to be despaired of, some efficient man of clear integrity, ought without delay to be sought in his place.
>
> The Cashier ought also to be of a character and in a situation to inspire the most thorough confidence.
>
> No time ought to be lost in determining upon the place and contracting for the land and commencing the buildings. Under present circumstances I would advise that the latter be begun upon a moderate scale yet so as to be capable of extension.
>
> I would also advise that the Society confine themselves at first to the cotton branch. The printing business to commence as early as possible. A complication of objects will tend to weaken still further a confidence alredy too much impaired.
>
> If a loan should be wanted I would if requested cooperate to endeavor to procure one on favourable terms.[44]

Hamilton concluded by urging that everything be done as quickly as possible to begin operations of the manufactory: "nothing scarcely can be so injurious to the affairs of the Society as a much longer suspension of operations." He quickly followed up with his part by securing a loan of $5,000 from the Bank of New York, a much-needed influx of cash to move the S.U.M. forward.[45]

Alexander Hamilton, along with his father-in-law General Philip Schuyler, provided significant input toward the final decision for the siting of the manufactory:

> I have had a full Conversation with General Schuyler on the Subject of the Several propositions which have been under consideration respecting location of the buildings for the Manufactory. My original impressions on this point, have been confirmed by Subsequent examination; And I now Entertain no doubt, that the most advisable course is to abandon for the present the Idea of a Canal And to erect the necessary buildings near the Great Falls.[46]

Hamilton additionally attended the July meeting of the S.U.M. directors, held in Abraham Godwin's tavern near the Falls, at which Nicholas Low advised that the committee had

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[44] As cited in Davis, *Essays, No. I–III,* 414–415. Nathanial Hubbard was chosen for the Superintendent's position by the directors, but Hubbard declined. S.U.M. Director Benjamin Walker was the first to serve as the treasurer or cashier, followed by Abijah Hammond. In August 1792, the directors hired James Griffiths of Newark, NJ, as clerk/accountant. ("James Griffiths, Newark, NJ, to the Deputy-Governor and directors of S.U.M.," #148, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[45] Davis, *Essays, No. I–III,* 419.

[46] As cited in Davis, *Essays, No. I–III,* 421–422.

purchased 700 acres at Great Falls for £3,293, had the boundary surveyed, and also surveyed the boundary for the "Town of Paterson."[47]

This exceedingly productive meeting also resulted in detailed resolutions to begin the construction of the manufactory, beginning with a call for "a number of Houses to be erected for the accommodation of the Workmen to be employed by the Society." The board then recorded a resolution for construction of the waterworks, with specific instructions that the water "be conveyed across the said Gully upon the summit of a wall to be raised upon a level with the bed of the said River," at a cost of $20,000. The next called for the construction of a cotton mill, "55 by 32 feet to be built of Stone and four stories high," with "requisite machinery," at $15,000. Next, a "Printing Shop and Calander House" with the "requisite machinery for the Printing business. . . to be built of Stone 78 by 31 feet three stories high," for $12,000, and a "Carding and Roping House," with "Machinery for Spinning, Weft, and Weaving. . . to be built of Stone 64 by 36 feet, two stories high," at $6,000. Additionally, the directors ordered the construction of a sawmill and sheds to house the machinery.[48]

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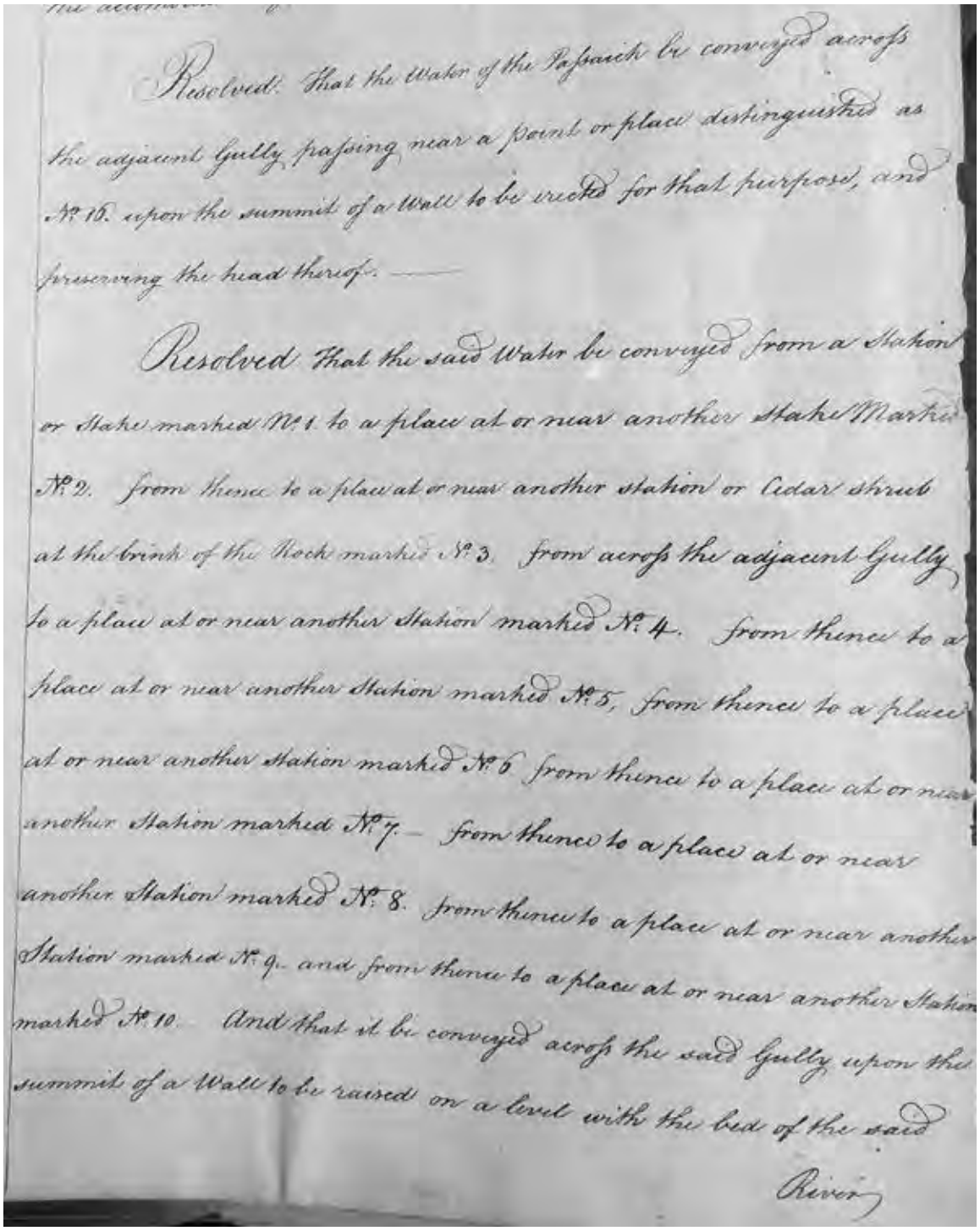
[47] "Directors Minutes, S.U.M., Vol. 1, Part 1," 43, S.U.M. Collection, Paterson Museum, Paterson, NJ. In September 1792, the S.U.M. purchased about fifty additional acres from Simeon Van Winkle, Abraham Godwin, and Cornelius Van Winkle, whose land included a gristmill and sawmill. ("Nicholas Low, Chairman of the Location Committee of S.U.M., to the Directors," #197 and #198, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

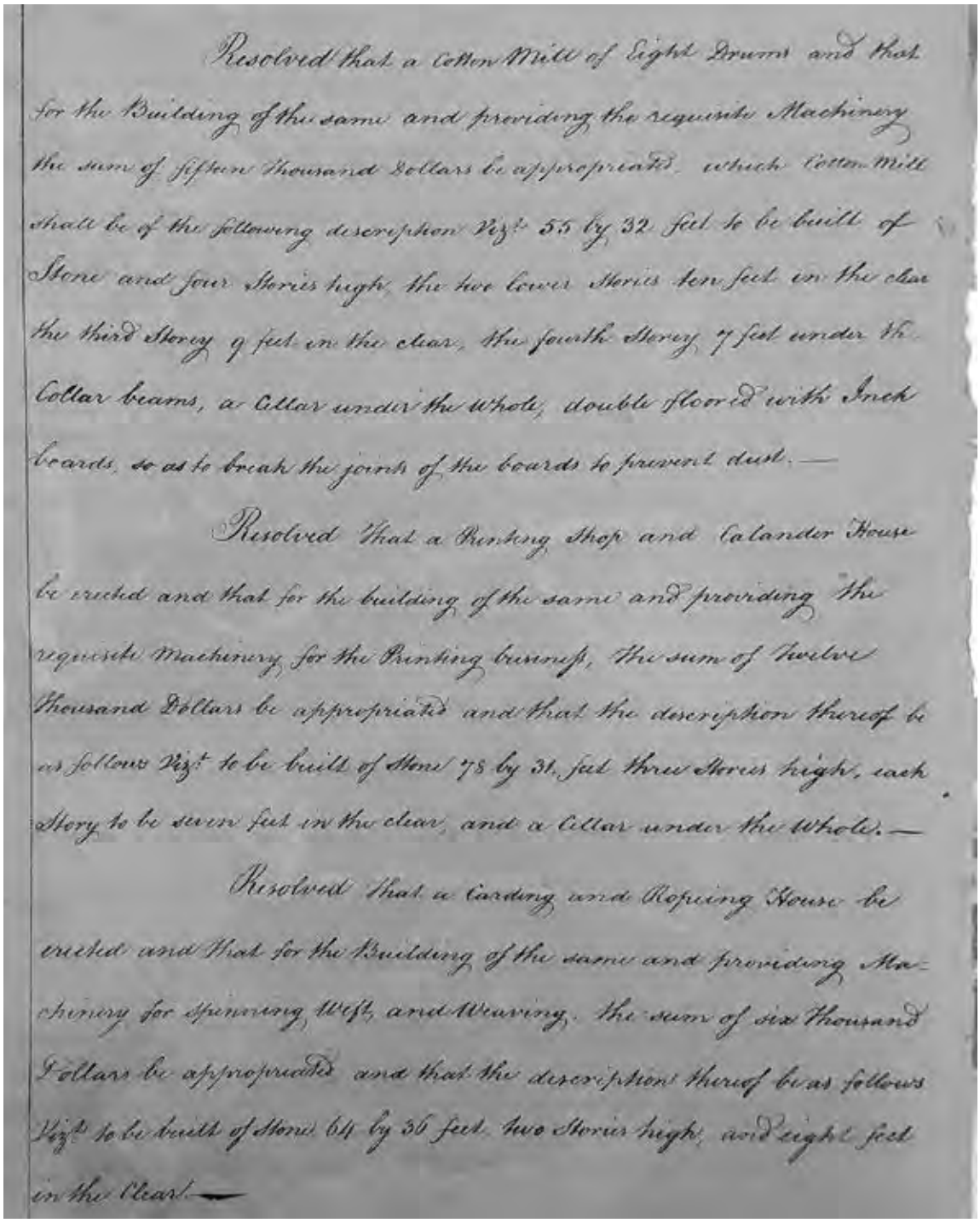
[48] "Directors Minutes, S.U.M., Vol. 1, Part 1," 45–49, Paterson Museum, Paterson, NJ.



Resolved That the Water of the Passaick be conveyed across the adjacent Gully passing near a point or place distinguished as No 10. upon the summit of a Wall to be erected for that purpose, and preserving the head thereof. —

Resolved That the said Water be conveyed from a Station or Stake marked No 1. to a place at or near another Stake Marked No 2. from thence to a place at or near another station or Cedar shrub at the brink of the Rock marked No 3. from across the adjacent Gully to a place at or near another Station marked No 4. from thence to a place at or near another Station marked No 5, from thence to a place at or near another Station marked No 6 from thence to a place at or near another Station marked No 7. — from thence to a place at or near another Station marked No 8. from thence to a place at or near another Station marked No 9. and from thence to a place at or near another Station marked No 10. And that it be conveyed across the said Gully upon the summit of a Wall to be raised on a level with the bed of the said River

Figure 23: July 4, 1792, S.U.M. Directors' Minutes, Vol. 1, Part 1, p. 45. (Paterson Museum)



Resolved that a Cotton Mill of Eight Drums and that for the Building of the same and providing the requisite Machinery the sum of fifteen thousand Dollars be appropriated which Cotton Mill shall be of the following description Viz.t 55 by 32 feet to be built of Stone and four Stories high the two lower Stories ten feet in the clear the third Story 9 feet in the clear, the fourth Story 7 feet under the Collar beams, a Cellar under the Whole, double floored with Inch boards, so as to break the joints of the boards to prevent dust. —

Resolved That a Printing Shop and Calander House be erected and that for the building of the same and providing the requisite Machinery for the Printing business, the sum of twelve thousand Dollars be appropriated and that the description thereof be as follows Viz.t to be built of Stone 78 by 31 feet three Stories high, each Story to be seven feet in the clear, and a Cellar under the Whole. —

Resolved That a Carding and Roping House be erected and that for the Building of the same and providing Machinery for Spinning Weft, and Weaving, the sum of six thousand Dollars be appropriated and that the description thereof be as follows Viz.t to be built of Stone 64 by 36 feet two Stories high, and eight feet in the Clear. —

Figure 24: July 4, 1792, S.U.M. Directors' Minutes, Vol. 1, Part 1, p. 46. (Paterson Museum)

Pierre L'Enfant and Peter Colt: Building the S.U.M. and Paterson

The waterworks plan laid out by the directors and recorded in the July 4 meeting minutes was likely developed in consultation with Philip Schuyler and possibly also Thomas Marshall. Marshall had already made clear his understanding of hydraulic power in his communications with Hamilton. Philip Schuyler, notes historian Russell Fries, "was probably one of the most technically experienced men in America at the time," having helped design a steam-powered system to pump water from his New Jersey mines and was deeply involved in the development of the Mohawk River canal system in New York.[49] Schuyler knew the terrain after visiting the Falls on several occasions, and submitted a plan to the directors at their May meeting. His plan suggested that a "canal or raceway should be cut from above the 'falls' eastward; same to be at least 16 feet wide and 10 feet deep" and that a "dam should be erected on the rise above the 'falls' as soon as the water is low." Schuyler additionally included "specifications for proposed improvement," and "a second raceway so water could be used for power a second time," and recommended immediate construction of a sawmill.[50]

Russell Fries described the challenges inherent in the planning for the Great Falls site in his Historic American Engineering Record (HAER) documentation of the "S.U.M. Power Canal System":

> In order to bring water from the river above the Falls to an area of less precipitous terrain two problems had to be dealt with. A channel from the bed of the river had to be cut through the rocks in order to draw water from the river in the first place. Secondly, there was a large gully behind the rocks bordering the river, which was an overflow channel of the river itself. This had to be crossed. If some means were found to carry the water over the gully then yet a third problem faced the developers in the form of the main ridge which blocked the course of the stream to the east. This had to be cut for the passage of the canal. Once beyond this point the problems became the relatively simpler ones of cutting and filling for a canal to take water to the mill sites.[51]

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[49] Fries, *Great Falls SUM Power Canal System,* 15. Fries also suggests that Christopher Colles, a New York civil engineer, may have been consulted, though he states there is no documentation that he was involved. On May 15, 1792, site committee member Archibald Mercer recommended "the appointment of John Hills of Philadelphia or Christopher Coler [Colles] of New York as engineers to complete geological surveys." (#138, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Hist. Soc., Paterson, NJ) There is no record that either man was actually employed by the S.U.M.

[50] "May 15, 1792, General [Philip] Schuyler," #147, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[51] Fries, *Great Falls SUM Power Canal System,* 19.

Neither Schuyler nor Marshall was a professional engineer and they did not appear to consider themselves capable of designing the details of a system intended to power multiple factory buildings. Despite this, the directors moved forward with the Schuyler plan.

On July 10, 1792, the directors published a request for contractor's bids for construction of the waterworks, mill buildings, and worker housing in the *National Gazette*. The scope of work for the waterworks appeared to be based in part upon the plan proposed by Hamilton after consultation with Schuyler. It included five items:

> 1st. To cut a canal from the river Passaick, beginning at a point near a station, where stands a stake marked No. 1, and continuing thence to the brink of a precipice at or near a rock marked No. 3. *This canal* must be thirty feet wide, and must be sunk to a level with the surface of the water in the driest season.
>
> 2d. To erect flood-gates in the said canal near of the brink of the precipice,
>
> 3d. To erect a dam on the Passaick above the Great Falls, and below the place of the canal. The dam to be four feet above the level of the surface of the water at the driest season.
>
> 4th. To erect a dry wall across a gully adjacent to the above-mentioned precipice, in a direction from the said station No. 3, to another station being a stake marked No. 6, on or near the summit of a hill, extending from the one to the other; and to make a wooden trough upon the said wall sixteen feet wide by seven feet deep.
>
> 5th. To extend a trough of the same dimensions, from the said station No. 6, another station being a tree marked No. 7, with a dry wall on one side, the whole length thereof, of the thickness of six feet.[52]

Bids were due to be submitted by July 26. In the July 14 edition of the *National Gazette,* the paper also ran an article about the S.U.M.'s activities, including the news "that the celebrated architect, Monsr. L'Enfant, is expected there on Tuesday or Wednesday next for the purpose of laying out the new town, the form of which is contemplated to be nearly circular, encompassing a delightful plain, intended for a bleaching ground."[53]

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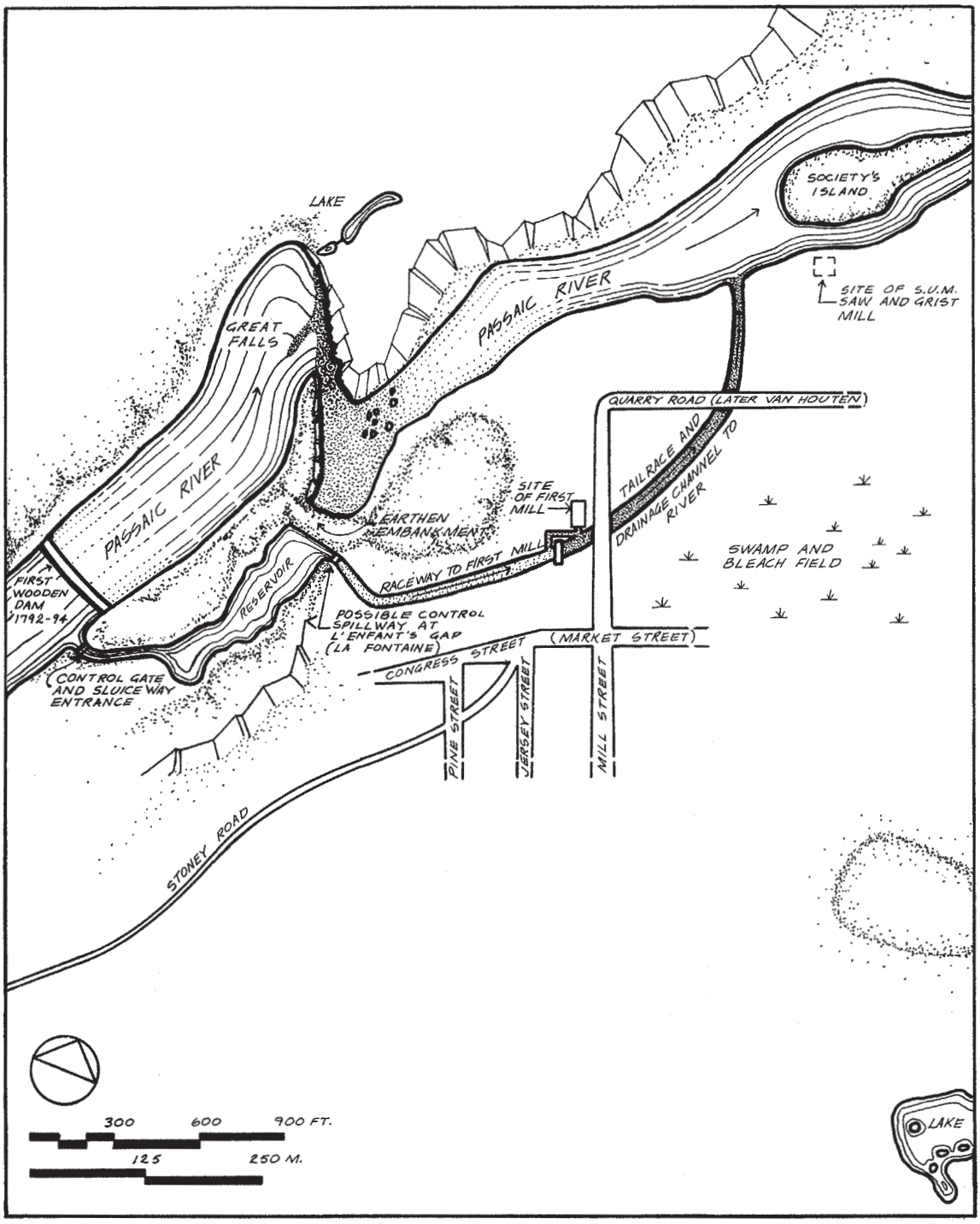
[52] "Society for Establishing Useful Manufactures," *National Gazette.* (Philadelphia [Pa.]), 14 July 1792, 295, *Chronicling America: Historic American Newspapers*. Library of Congress, accessed 4/26/2019, https://chroniclingamerica.loc.gov/lccn/sn83025887/1792-07-14/ed-1/seq-3. Advertisements were also published in New York and New Jersey newspapers. (Davis, *Essays, No. I–III,* 423)

[53] "Philadelphia, July 14, 1792," *National Gazette.* (Philadelphia [Pa.]), 14 July 1792, 294, *Chronicling America: Historic American Newspapers*. Library of Congress, accessed 4/26/2019, https://chroniclingamerica.loc.gov/lccn/sn83025887/1792-07-14/ed-1/seq-2.



PATERSON RACEWAYS, [1792-99]

THIS SHEET DEPICTS THE FIRST RACEWAY PLAN ORIGINALLY DESIGNED BY PIERRE CHARLES L'ENFANT AND MODIFIED BY PETER COLT. WATER FROM THE PASSAIC WAS DIVERTED INTO THE RACEWAY SYSTEM BY A WOODEN DAM. WATER FELL INTO A RESERVOIR AND THEN PASSED THROUGH THE RACEWAY TO THE FIRST S.U.M. MILL. AFTER LEAVING THE MILL, WATER FLOWED BACK INTO THE PASSAIC THROUGH A DRAINAGE CHANNEL.
SOURCE: CONCEPTUAL MAP BASED ON HISTORICAL DOCUMENTATION AND 1"=100' MAP.
MAP PREPARED BY THE HISTORIC AMERICAN ENGINEERING RECORD, HAER.

Figure 25: HAER map, "Paterson Raceways, 1792–1799" (Library of Congress)

Major Pierre Charles L'Enfant was fresh from his employment as the designer of the new United States capital city of Washington in 1791. Although he was a visionary city planner, L'Enfant apparently chaffed at working under a higher authority. In the case of the Washington design, that authority was the federal commission appointed to oversee the city's development. In February 1792, President George Washington dismissed L'Enfant from the project for insubordination.[54] As a member of Washington's cabinet, Hamilton would have been aware of the issues which had arisen relating to L'Enfant's intransigence. Still, it appears that by July of 1792, Hamilton and the S.U.M. directors were prepared to engage L'Enfant to design a town plan for Paterson.[55]

When the local contractor's bids returned for the construction projects at Paterson, none rose to the level of competence—or price—anticipated by the directors.[56] Hamilton recommended Major L'Enfant as a "Civil engineer that is an Artist acquainted with Mechanics generally, particularly in reference to architecture, aqueducts, Canals &c &c including necessarily a knowledge of hydroulicks."[57] On August 1, 1792, the directors requested that L'Enfant review the waterworks plan and by mid-August, signed him to a one-year contract to superintend the construction project at a salary of $1,500. L'Enfant's purview included the construction of the waterworks as well as the mill buildings and worker housing, and the execution of the town plan. The directors hired John N. Cumming, a stockholder in the S.U.M., as superintendent. They tasked Cumming with "procuring such workmen and materials… as the said M. L'Enfant shall require from time to time," and "to pay the expences accruing thereon, keeping regular accounts of the same, and also to procure such materials for Machinery as shall be required in their respective branches by William Hall, Thomas Marshall and William Pearce."[58]

L'Enfant began work immediately, presenting his design for the waterworks at the August 20 directors' meeting. The text of the plan (see Appendix B, including a copy and transcription of L'Enfant's plan transmitted in a letter, and as copied into the Directors' Minutes) referred to a sketch (long lost) with points labeled A through Z. Noting that the previous options presented by the directors would, "in every respect be answerable,"

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[54] "Editorial Note, To George Washington from Pierre L'Enfant, 21 November 1791," Hamilton Papers, *Founders Online: National Archives*, accessed 4/26/2019, https://founders.archives.gov/documents/Washington/05-09-02-0124.

[55] "Philadelphia, July 14, 1792," *National Gazette.* (Philadelphia [Pa.]), 14 July 1792, 294, *Chronicling America: Historic American Newspapers*. Library of Congress, accessed 4/26/2019, https://chroniclingamerica.loc.gov/lccn/sn83025887/1792-07-14/ed-1/seq-2.

[56] Davis, *Essays, No. I–III,* 424.

[57] As cited in Hunter Research, Inc., *Cultural Resource Investigation of the Allied Textile Printing Site, Paterson NJ, Volume I, Factories Below the Falls: Paterson's Allied Textile Printing Site in Historic Context* (Trenton, NJ: Division of Property Management and Construction, 2010), 2.25 (hereafter cited as *ATP CR Study, Vol. I, Factories Below the Falls*).

[58] "Directors Minutes, S.U.M., Vol. 1, Part 1," 57, 59, S.U.M. Collection, Paterson Museum; Fries, *Great Falls SUM Power Canal System,* 29–30.

L'Enfant reported that his plan suggested only "changing the direction first thought of, and adopting a more safe method of execution."[59] He went on to describe his plan to draw water from farther up the river, and to replace the "dry wall across the gully," which was intended to carry the water across in a wooden sluice, with a stone arched aqueduct wide enough to include a towpath and carriageway. Like the earlier S.U.M. plan, L'Enfant planned to gather water in a reservoir, though without his map it is unclear where that was to be located. Additionally, like Schuyler's recommendation, L'Enfant proposed a second raceway to allow for maximum use of the waterpower generated.[60]

By September 17, L'Enfant reported "rapide" progress on the S.U.M. construction project at Paterson (spelled as written):

> the ground through which this is to be carried is already cleared of all timber and immense Rock removed from the way of operation so that I am in hope in a few weak to be enabled to make a begining of the fundation of the grand acqueduc—also to open the Rock across the ill and to make a begining Every way proportional to the number of hand as shall be collected the which daily Increase in number.
>
> Severals of the principals streets are cut through and about clearing. Stone is Extracting from the quarry and provision of Every sort making to Enable a begining of the principals and most necessary building for the manufacture and the Employed—for whom in waiting til the building are compleated I have ordered a number of barrack to be Erected suitable to the various purposes.[61]

The work continued through the fall and into December, when winter weather ended the construction season.

On December 25, 1792, L'Enfant sent a lengthy report to the directors detailing his accomplishments over the previous four months, as well as the impediments to his progress (see Appendix B for a full transcription of this fourteen-page letter report). Work focused on removing rock to prepare the way for the aqueduct and canal, some of which was used to lay the foundation of the aqueduct. L'Enfant laid out a "work road" as well as a "grand street" to be part of the Paterson town plan. L'Enfant reported delays in planning for the town layout [spelled as written],

> owing to the difficulties approsing [?] a purchase of those lands over which I wished to pass the streets : seeing how my sollicitud for in a manner rised the Expectation of the owner who in measure of the work progressed thought

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[59] "Directors Minutes, S.U.M., Vol. 1, Part 1," 60, S.U.M. Collection, Paterson Museum.

[60] "Directors Minutes, S.U.M., Vol. 1, Part 1," 63, S.U.M. Collection, Paterson Museum; Fries, *Great Falls SUM Power Canal System,* 26–27.

[61] "To Alexander Hamilton from Pierre Charles L'Enfant, 17 September 1792," Hamilton Papers, *Founders Online: National Archives*, accessed 4/11/2019, https://founders.archives.gov/documents/Hamilton/01-12-02-0293.

> themselves assured I most [must] give any price to them and subscribe to their condition for a division of lots, this determined me to abandone for awhile the Intention of Extanding the town down toward Totoway bridge… [62]

L'Enfant had overseen the construction of two buildings within the town boundary, one a "barack" intended to temporarily house a grocer by the name of Mr. Adam, and the other a storehouse for company materials, with a "cellar being capable also of admitting of six weaving loom" in order to begin production as soon as possible. It appears that L'Enfant spent much of his time refining his plans for the town and the waterworks. In addition to his recommendation to expand the town boundaries, L'Enfant strongly suggested the directors immediately purchase the land above the Great Falls as far as Little Falls, noting:

> some great Inconveniency arising in carring [carrying] one [on] the work of the canall, on the upper passaick, from the too great neareness of Henry Garrise property, and the advantage there will be to open a direct road to the little fall which most [must] pass across that land. cannot but made it the Interest of the Society to secure much of it as can possibly be obtained as however heigh may his demand be the Society is to consider, that what could have been purchased four mounth ago for ten pound now sel more than double and that the rise of property will be in proportion of a progress shall be made in advancing the work.[63]

L'Enfant estimated he had thus far spent "not above 12000 dollors," after deducting "considerable of the sums Expended… the amount of what relate the factory." This reference was to what he deemed to be wasteful work done under the supervision of Marshall, Pearce, and Hall.

L'Enfant's December 25 report included four pages of discussion concerning his "judgment of the State of matter[s] resting with the three head manufactures to accomplish." He noted Marshall, Pearce, and Hall's inattention to the task of building the machines needed to begin the cotton manufactory. His particular ire fell on Thomas Hall, who he found untrustworthy and secretive. L'Enfant suggested that the "three branches" of manufacture and machine building should be put under his supervision, stating that "both the machines making and the canal business &c are necessary to be carried on in harmony to each other and it never will unless it is made more understood than it has hither to been that I have a right fully to Inquire and to see myself what is going on in Every shop work or laboratory."[64]

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[62] "Major Pierre Charles L'Enfant to the Directors of S.U.M.," #219, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[63] "Major Pierre Charles L'Enfant to the Directors of S.U.M.," #219, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[64] "Major Pierre Charles L'Enfant to the Directors of S.U.M.," #219, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

Just days before L'Enfant's report appeared before the directors, Marshall, Pearce, and Hall had submitted their year-end inventories, which seemed to belie some—though not all—of L'Enfant's complaints.[65] Still, the directors determined the efficacy of a superintendent to oversee the development of the manufactories and hired Peter Colt of Hartford, Connecticut in February 1793 to supervise the supervisors. The directors gave Colt the title "Supervisor of the Factory," with an annual salary of $2,500 and instructions "to act for the Society in the same manner as if the Works were his own property."[66]

Peter Colt was a good fit for the job. The youngest of ten children, Colt graduated from Yale College in 1764. He began work as a store clerk, then as a teacher in Elizabeth, New Jersey. He settled in New Haven, Connecticut as a trade merchant and during the Revolution, became a provisioner in the Commissary Department of the Continental Army. Beginning in 1788, Colt became the treasurer for the Hartford Woolen Manufactory Company. Through these various capacities Colt became acquainted with a number of prominent men, including William Paterson, Elias and Elisha Boudinot, and Nehemiah Hubbard, Jr., any of whom may have influenced the S.U.M. directors in their decision to hire Peter Colt as superintendent of the factory.[67]

Upon his arrival in Paterson in late February 1793, Colt wrote to Hamilton concerning several disturbing issues he found there. He described the core mechanics—Marshall, Pearce, and Hall—as dissatisfied with "their Situation & prospects." Colt also complained that "Several Buildings which have been ordered for manufactures, are extremely wanted… but Majr. L'Enfant, to whom this part of the Business has been confided, not being here, nothing can be done." "In short," he concluded, "no arrangments can be made for puting things on a more durable & advantagious footing untill the Majr. returns on the ground."[68]

L'Enfant apparently left Paterson after the December shutdown and did not return to Paterson until late March 1793. At a March 24 meeting, S.U.M. directors Nicholas Low and Elisha Boudinot informed L'Enfant and Colt that Low was planning to revive the

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[65] "Thomas Marshall to the Governor and Directors," #214, "William Hall to S.U.M.," #215 and #216, "William Pearce," #217, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ. Pearce also submitted a report to L'Enfant on December 24, here abstracted: "Progress in three different branches, viz: machine making, carding and spinning; weaving has been small since Pearce arrived in Paterson; men had been entirely employed in building dwellings and houses; machines made by Pearce are as follows: six single looms, one warping mill, one doubling and twisting mill, six seeds and gears for double looms, same for single looms; expects to complete machines ordered by Board of Directors in six months; inventory rendered, accounted for all machines completed and ready for work; hopes to report definite progress the next spring. ("William Pearce to Maj. L'Enfant," #218, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ)

[66] Fries, *Great Falls SUM Power Canal System,* 34; "Directors Minutes, S.U.M., Vol. 1, Part 1, 79," S.U.M. Collection, Paterson Museum. The directors first asked Nehemiah Hubbard, Jr. to accept the position, but Hubbard declined.

[67] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.28–2.30.

[68] "To Alexander Hamilton from Peter Colt, 28 February 1793," Hamilton Papers, *Founders Online: National Archives*, accessed 4/11/ 2019, https://founders.archives.gov/documents/Hamilton/01-14-02-0062; Fries, *Great Falls SUM Power Canal System*,37.

Duer-Allon (Allou) plan under the guidance of Samuel Ogden. Low directed L'Enfant to continue his work on the aqueduct as it "would facilitate *Saml Ogden* plan."[69] Infuriated, L'Enfant immediately put a stop to all work on the water project and laid off the laborers. Writing to Hamilton to complain of the situation, L'Enfant bemoaned "that the best of my Schems may yet by chance to be left aside and that my whole labour is likely once more to be made a mean[s] to gratify the petit Interest of some men to the Expulsion of me and the Subversion of all my views."[70] At the April 16 meeting, the S.U.M. Board of Directors once again rejected the Duer-Allon (Allou) plan. However, to promote a more speedy completion of the waterworks, the directors resolved, "that Major L'Enfant be requested to confine his attention entirely to the completion of the Aquaduct for the use of the Works. . . and that the erection of the buildings and other Work devolve to Mr. Colt."[71] The directors' resolve crumbled however in the face of L'Enfant's response, according to Colt (spelled as written):

> he [L'Enfant] wishing to have the compleating his plan of the Town, & stating the impropriety of puting that under any other direction it was agreed to. On further conversation it appeared he considered the *Cotton Mills* as a part of the Canal—at least necessarily connected with it—and shewed the greatest reluctance at having that part of the Business taken out of his Management. After much conversation the Board seemed to acquiese in his having the superintendance of the *Cotton Mill*. . .[72]

In return, L'Enfant "assured them he will give them the entire command of the water this Season." He put his men to work, but once again disappeared without explanation. On June 8, 1793, the directors had had enough. Citing financial problems and the slow progress, they cancelled the planned aqueduct. Major Pierre L'Enfant removed himself and his sketch plans from Paterson, never to return.[73]

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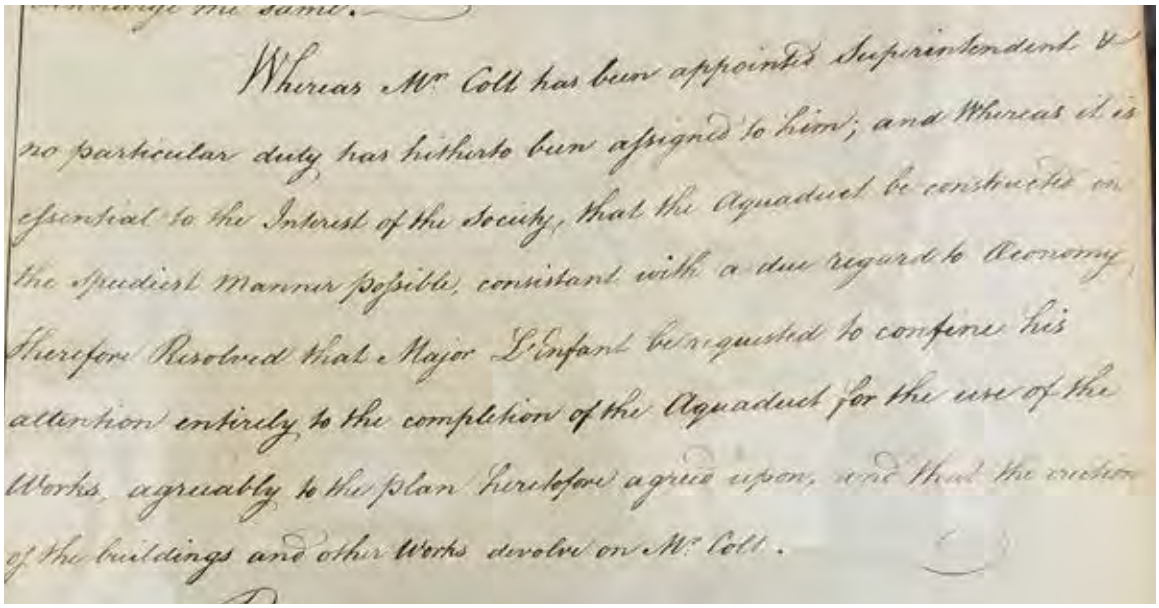
[69] "To Alexander Hamilton from Pierre Charles L'Enfant, 26 March 1793," Hamilton Papers, *Founders Online: National Archives*, accessed 4/11/ 2019, https://founders.archives.gov/documents/Hamilton/01-14-02-0140.

[70] "To Alexander Hamilton from Pierre Charles L'Enfant, 26 March 1793," Hamilton Papers, *Founders Online: National Archives*, accessed 4/11/ 2019, https://founders.archives.gov/documents/Hamilton/01-14-02-0140. Though L'Enfant did suggest in his December 25, 1792 report that the S.U.M. should purchase 900 acres to include the land between the Falls and Vreelands Brook. However, his recommendation was to make the Passaic River navigable rather than to construct a canal.

[71] "Directors Minutes, S.U.M., Vol. 1, Part 1," 83, S.U.M. Collection, Paterson Museum; Fries, *Great Falls SUM Power Canal System*, 41.

[72] "To Alexander Hamilton from Peter Colt, 7 May 1793," Hamilton Papers, *Founders Online: National Archives*, accessed 4/11/ 2019, https://founders.archives.gov/documents/Hamilton/01-14-02-0282. Colt additionally expressed his fear that L'Enfant's plan was too expensive and asked Hamilton to remind him of "the necessity of the greatest Oeconemy[sic] in executing his plans; & confining his views to those things which are *essential* instead of what is *ornimental* in forming his works." Presumably, Colt was referring to the aqueduct as more ornamental than practical.

[73] Fries, *Great Falls SUM Power Canal System*, 41–43. L'Enfant claimed he was never obligated to prepare official plans ("To Alexander Hamilton from Pierre Charles L'Enfant, 16 October 1793," Hamilton Papers, *Founders Online: National Archives*, accessed 4/11/ 2019, https://founders.archives.gov/documents/Hamilton/01-15-02-0285).



Whereas Mr. Colt has been appointed Superintendent &
no particular duty has hitherto been assigned to him; and Whereas it is
essential to the Interest of the Society, that the Aquaduct be constructed in
the speediest Manner possible, consistant with a due regard to Oeconomy,
Therefore Resolved that Major L'Enfant be requested to confine his
attention entirely to the completion of the Aquaduct for the use of the
Works, agreeably to the plan Heretofore agreed upon, and that the erection
of the buildings and other Works devolve on Mr. Colt.

Figure 26: February 19, 1793, S.U.M. Directors' Minutes, Vol. 1, Part 1, p. 83 (Paterson Museum)

With Peter Colt left in charge of the building program, an air of American pragmatism took over from L'Enfant's admirable, but perhaps unrealistic plans for both the aqueduct and the town of Paterson.[74] Much of the waterworks plan reverted to ideas put forth by General Schuyler, though the cuts from the river and ravine, opened for L'Enfant's plan, remained in use. Rather than build an aqueduct or the sluice-wall to cross the ravine, Colt built the wall to dam the ravine for the reservoir. The outlet from the ravine, presumably located at L'Enfant's point D (labeled "L'Enfant's Gap" or "La Fontaine" on the HAER map), connected to the raceway leading directly to the cotton mill.[75] After additional delays owing to weather, workers, and Passaic River flooding, the waterworks were completed in late June 1794, a full year past the hoped-for completion in 1793.

Through that interim year of construction, under Peter Colt's supervision, spinning operations began in a frame building which became known as the "Bull Mill." The moniker came from its source of power, oxen rather than water, according to 1880s Paterson historian Levi Trumbull. The mill produced cotton yarn until the water-powered cotton mill was ready for production in June 1794.[76]

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[74] For discussion of the genesis of L'Enfant's plans, see Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.17–2.24.

[75] Fries, *Great Falls SUM Power Canal System,* 44–45.

[76] Levi R. Trumbull, *A History of Industrial Paterson* (Paterson, NJ: Carlton M. Herrick, Book and Job Printer, 1882), accessed 5/24/2019, http://archive.org/details/historyofindustrOOtrum. According to Trumbull, the "Bull Mill" was located "on the site on which the cotton factory of A. Prall & Co. was afterward built." Hunter Research identifies that as the northwest corner of Mill and Market streets (Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.26).

Workmen of the S.U.M. Construction Phase

Pierre L'Enfant's visionary plan for Paterson and its waterworks failed, according to Russell Fries, because "the cost of skilled labor was significantly higher in America than in France, and L'Enfant simply assumed that the same number of cheap, skilled stonemasons would somehow be available to accomplish his task."[77] In mid-October 1792, the *National Gazette* reported the S.U.M. had "three hundred laborers… at work, opening 'a mountain of free stone' near the building sites."[78] What must have been a remarkable outlay of cash for labor doomed L'Enfant's plan. When L'Enfant withdrew from the project, he had already spent more than the $20,000 allotted to him, with very little progress to show for it.[79] On June 13, 1793, just five days after taking over the project, Peter Colt "discharged all laborers employed under Major L'Enfant."[80]

Who were the laborers who worked on the S.U.M. construction project? Unfortunately very little is known about these men (and women?), as there appear to be no extant company payroll records. Records from the Potowmack Navigation Company, a contemporary Virginia/Maryland corporation dedicated to opening navigation along the Potomac River, document that company's employment of mostly indentured and enslaved workers.[81] Alexander Hamilton was strongly opposed to slavery and is unlikely to have allowed the S.U.M. to engage enslaved laborers. Thus, the S.U.M. does not appear to have followed this route to procure their construction workforce. In 1792, John N. Cumming was in charge of hiring and paying the workers to build the waterworks and buildings for the S.U.M. Though Cumming's records have thus far not been located, S.U.M. directors' meeting minutes and numerous reports and letters indicate that the S.U.M. hired free men to do the construction work. Most of the men appear to have been local to New Jersey, skilled in the construction trades, many of whom brought with them additional laborers.

In 1792, Avery King, a mason by trade from "Second River," sought work with the S.U.M. and noted that he could "bring five or six men to help."[82] As the 1793 construction season approached, the S.U.M. began receiving new letters of inquiry from local men

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[77] Fries, *Great Falls SUM Power Canal System*, 44.

[78] Davis, *Essays, No. I–III*, 466. The quarry was reported in 1792 as "under the direction of" Isaiah Wool and William Yoeman. ("Isaiah Wool and William Yoeman, to S.U.M.," #249, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[79] "To Alexander Hamilton from Pierre Charles L'Enfant, 16 October 1793," Hamilton Papers, *Founders Online: National Archives*, accessed 4/11/ 2019, https://founders.archives.gov/documents/Hamilton/01-15-02-0285.

[80] "Peter Colt," #299, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[81] See Paula S. Reed & Assoc., Inc., *Great Falls Park Historic Resource Study* (Washington, DC: Department of the Interior, National Park Service, National Capital Region, April 2008), for an in-depth study of the employment history of the Potowmack Navigation Company.

[82] "Avery King, Second River, to S.U.M.," #251, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

seeking work, including Abraham and Jehiel Day, both carpenters from Tuckasunny Plaine, Mendham Township in Morris County. The Days, who also hoped to purchase house lots in Paterson, claimed they could bring fifteen to twenty men with them "to do rough work."[83] In March 1793, Christian Howell, a mason from Princeton, also asked for work and a lot in Paterson, with the promise to "bring laborers with him."[84] William Reed, a carpenter from Monmouth County, "near Cranberry," wrote that he wanted "a lot to settle on and employment."[85] Other applicants included Nathanial Brooks, a carpenter from Haverstraw; Abraham Polhemus, "a carpenter and shoemaker of Snedickers Pond"; Abraham Forshea, a carpenter from Saddle River; and three men from Orange County—Abraham A. Blauvelt (quarryman), John Frederick Hartwick, and [?] Taylor—all of them seeking employment and to lease lots in the town of Paterson.[86]

The prospect of housing in Paterson was clearly a significant draw for potential workers, though the S.U.M. actually constructed only a few of the planned fifty houses (initially designated for the "mechanics"). With the loss of L'Enfant's town plan in June 1793, Peter Colt laid out a plan for streets and lots in November 1793. Colt's plan, which largely followed a traditional grid pattern, included quarter-acre lots which were made available for sale or lease to S.U.M. employees, as well as to housing speculators and to people interested in establishing town businesses.[87]

In his final push to complete construction, Colt placed an advertisement on March 20, 1794, for "Forty good Laborers… to compleat the Canal and Water-Courses for the Cotton Mill at Paterson." He offered "generous wages… paid regularly every week."[88] Construction of the cotton mill, known as "Marshall's Mill," was completed on May 1, 1794, and by the end of June, the raceway too was complete and operational (see Figure 25).

S.U.M. Manufacturing and Factory Workers

In June 1794, water-powered manufacturing in Paterson was officially underway. It opened to great fanfare, according to a July 2 article in the *Connecticut Journal:*

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[83] "Abraham Day, Tuckasunny Plaine, to Joseph Hills," #271, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[84] "Memorandum," #273, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[85] "William Reed, Monmouth County, near Cranberry, to S.U.M.," #274, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[86] "Application for employment," #275, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[87] Davis, *Essays, No. I–III*, 491–492.

[88] Davis, *Essays, No. I–III*, 468.

> We have the pleasure to announce to the public that on Saturday last, June 14, the large mill for spinning cotton by water-power was put in operation at Paterson, to the great satisfaction of all those who wish well to the manufactures of this country; and, from the specimens given on that day, there is no doubt but the expectations of the public will be fully answered. The dam and canal are completed, and there is water sufficient for all kinds of mills, and great conveniences for placing them. The mill was opened with great parade; a considerable company was collected from all parts, who went in procession to the mill, and a ball was given to the factory; and the expectations of the public were not only gratified, but greatly raised, in contemplating the future importance of their rising fabric.[89]

The S.U.M. acquired thousands of pounds of raw cotton (called seed cotton) and ginned cotton from Mississippi (through New York agents) for delivery in April and May 1794.[90] William Hall's printing and dying section failed when he absconded, along with William Pearce, to Wilmington, Delaware, in the early fall of 1793, taking with him much of the equipment paid for by the S.U.M.[91] However, by November 1793, Colt signed an agreement with John Eddy, "late of Ireland," to direct the bleaching and dying business.[92] Beginning in March 1795, that business was under the direction of M. Tesserandot, who was employed under a three-year contract with the S.U.M.[93] The printing operation was contracted to Edward Harper & Co. in 1794, and in 1795 to H.W. Harper & Colt.[94] In April 1794, after William Pearce's departure, John Richardson, a recent immigrant from Scotland, contracted to rent space for weaving with up to ten looms.[95]

This, of course, was not the original plan for the S.U.M. according to the Prospectus, which included a wide variety of manufactures, owned and managed by the

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[89] William R. Bagnall, *The Textile Industries of the United States*, Vol. I (Cambridge, MA: The Riverside Press, 1893), 181.

[90] "Van Bibber and Chambers, New York, N.Y., to George Sutton and Joseph Hardy," #378, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ. Despite Hamilton's abhorrence of slavery, the very cotton used by the S.U.M. factory was grown in the southern US states using enslaved African laborers and the future success of American cotton cloth manufacturing was intimately tied to the American institution of enslaved labor.

[91] "Meeting of Directors of S.U.M.," #309, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society (PCHS), Paterson, NJ. Robert Hamilton reacquired the stolen equipment, found in Hall's house and some in Pearce's possession. (Doc. #317–319, 326–328, 330–331, PCHS)

[92] "Peter Colt to John Eddy," #312 (and #314), "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ; Davis, *Essays, No. I–III*, 485–486.

[93] "Contract S.U.M. and M. Tesserandot," #405, and "Peter Colt to M. Tesserandot," #410, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ

[94] Davis, *Essays, No. I–III*, 486.

[95] "John Richardson to S.U.M.," #370, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ. In May 1794, an emergency forced Richardson into "relinquishing business," and passed his "two looms on hand" to Thomas Marshall. (#375, PCHS)

corporation. Interestingly, Thomas Marshall first advised against this plan in 1791, writing to Alexander Hamilton:

> I had at first with you the idea that an Establishment comprehending a dozen different objects well chosen, conducted by an able direction, enlightened and honest managers and skillful workmen might have the greatest Success, and I think so still; but would not the union of so many qualities, on which the success entirely depends, be an absolute miracle?. . . I repeat it, Sir, unless God should send us saints for workmen and angels to conduct them, there is the greatest reason to fear for the success of the plan.[96]

Marshall recommended choosing "three or four of the principle branches. . . connected together that the Details may be more easy to follow," suggesting spinning, weaving, and dying cotton or wool as a logical combination.[97] In fact, it appears that Hamilton took Marshall's advice to heart as the mechanics hired and the machinery constructed through 1792 and 1793 all focused on those manufactures.

In January 1795, Colt reported on the state of the mill, which was then producing cotton thread or yarn, "the foundation of every cotton cloth fabricating establishment." He described the machines, including "ten carding engines and two roving and four drawing frames in one room"; in the "millroom" he noted "three 144 spindle mule-jennies" expected to produce "two to seven twists per day," and "ten water spinning frames working" with two more on order. Additionally, Colt wrote that "double twisted yarns" were then "in demand" and that Marshall had ordered a machine to accommodate that demand. In the weaving department, Colt was negotiating for the purchase of "looms and gears" as well as cloth from Marshall, who apparently had been weaving cotton fabrics on the side with his partner William Monk during the S.U.M. construction phase.[98]

Records of the skilled mechanics and mill workers employed by the S.U.M. during its early operations are found in the S.U.M. minutes and letters, particularly the primary mechanics—George Parkinson (English), Thomas Marshall (Irish), William Hall (English), and Joseph Mort (?)—who were hired at the start of the S.U.M.'s preparations. William Hall intended to hire workmen for the printing and dyeing work (fifteen men in total) directly from Europe, though this apparently never happened. William Pearce also employed a number of workers in the "weaving department" as early as 1792; however, it is not clear from where the men were recruited.[99] In 1793 the *National Gazette* reported that

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[96] As cited in Davis, *Essays, No. I–III,* 482–483. Davis notes that the letter is undated but probably is August 1791.

[97] Davis, *Essays, No. I–III,* 483.

[98] "Peter Colt to Nicholas Low, Paterson, NJ," #402, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[99] William Pearce, 1792, "Report of Number of Men Employed in Weaving Department of S.U.M.," #245, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

"artists and manufacturers" from Scotland had "engaged with the directors of the national manufactury [sic] at the town of Paterson."[100]

In his thorough 1917 study of the S.U.M., Harvard economics professor Joseph Stancliff Davis noted that many of the European workers came to the United States and the S.U.M. on their own:

> In the main, however, the Society seems to have depended upon the normal influx of Europeans, particularly Englishmen, who were leaving home voluntarily on account of changing industrial conditions, stimulated only by items or advertisements in American newspapers and such documents as Hamilton's Report on Manufactures.[101]

Davis additionally suggested that some S.U.M. factory employees were American-born. Indeed, Thomas Marshall noted in his 1795 loom and fabric sale to the S.U.M. that the "superfine calico designed for [Martha] Washington," was "woven by John Vreeland," who was a descendant of one of the area's original Dutch settlers.[102] William Bagnall, writing in 1893, reported the S.U.M. recruited employees "in the New York Workhouse."[103] Women do not appear in these earliest records of the S.U.M. factory workforce; however, that does not mean they were not there. In fact, local Paterson historian and John Jay College professor Glenn Corbett recently discovered records of the 1797 "Mill Pay List." The list covered the months of May through October 1797 and ranged from sixteen people employed in May to thirty-five in October. Just over a third of those employed were women and a number were locals, including Cornelius Van Winkle and Henry & Susan Godwin.[104] The S.U.M. did employ children, at least within the apprentice framework.[105] Estimates are given that by 1794, the S.U.M. employed as many as 125 people, while the population of the town of Paterson approached 500 men, women, and children.[106]

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[100] As cited in Davis, *Essays, No. I–III,* 488.

[101] Davis, *Essays, No. I–III,* 489.

[102] "Thomas Marshall, Cotton Mill, to H. W. Harper," #415, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ. John Vreeland was a descendant of the settler Michiel Jansen Van Broeckhuysen, who emigrated from Holland in 1636. The family adopted the name Vreeland in the second generation, likely named for the Dutch village of Vreeland. (see Nelson and Shriner, *History of Paterson and Its Environs, Vol. II,* "Pioneer Families," 9–12)

[103] William R. Bagnall, *The Textile Industries of the United States, Volume I* (Cambridge, MA: The Riverside Press, 1893), 181.

[104] Glenn Corbett, personal communication, October 2019. The 1797 "Mill Pay List," was discovered by Professor Corbett in the New York State Library, Papers, 1777–1870, "Scriba, George L. C. (George Ludwig Christian), 1752–1836," #SC521, Box 1.

[105] "Directors of S.U.M., Paterson, NJ," #204, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ; Davis, *Essays, No. I–III,* 489.

[106] Davis, *Essays, No. I–III,* 494. In April 1794, John Wright was "employed in teaching children of employees of the Society." ("John Wright, Paterson, to Nicholas Low, Governor of S.U.M.," #347, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ)

Though the future of Paterson and the S.U.M. in 1794 looked brighter, it was far from the *NJ Journal* prediction of 1792, which forecast, "twenty thousand persons will be employed in the manufactory at the town of Paterson."[107] In fact, by the end of 1795, it was becoming very clear that the Paterson manufactories were failing and the S.U.M.'s financial footing was collapsing. In March 1796, the directors voted to discontinue all manufacturing and place the cotton mill up for rent.[108] The next month, Superintendent Colt reported that he had discharged the factory workers "except Thomas Marshall and one laborer," retained "the glazer, one man and two apprentices" from among the printers, and Tesserandot, who continued at the cotton bleaching business.[109] The directors finally passed a resolution to hold a stockholders meeting in October to vote on the dissolution of the corporation, though the proposal failed to pass in 1796. At the March 1797 meeting, the newly elected Board of Directors appointed David Godwin as agent to oversee the now-largely dormant S.U.M. property.[110]

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[107] As cited in Davis, *Essays, No. I–III*, 426.

[108] "Directors Minutes, S.U.M., Vol. 1, Part 1," 119, S.U.M. Collection, Paterson Museum.

[109] "Peter Colt to Nicholas Low, Governor of S.U.M.," #419, "Documents in the Society for Establishing Useful Manufactures Collection," Passaic Co. Historical Society, Paterson, NJ.

[110] "Directors Minutes, S.U.M., Vol. 1, Part 1"; Davis, *Essays, No. I–III*, 505. The recently discovered 1797 "Mill Pay List" indicates that the mill was in operation at least from May to October 1797.

Conclusion

Numerous factors have been put forward as contributing to the initial failure of the S.U.M. manufactories—the overly optimistic subscription plan, the Panic of 1792, overspending in the initial capital outlay, dishonest European mechanics, the high cost of labor in the United States (compared to Europe), and the seemingly insurmountable competition of European products. Davis summarized the failure as largely owing to a lack of firm commitment to manufacturing in the United States. Historian William Bagnall, writing in 1893, posited that the growth of American shipping, "a much surer and more profitable investment… than could then be hoped for from manufactures, in their undeveloped state," drew money away from the S.U.M. The subscribers to the corporation who failed to pay their full subscriptions or entirely jumped the ship during the 1792 Panic ultimately caused the scheme to be underfunded.

Davis and others, including contemporary British traveler Henry Wansey, believed the skilled workmen recruited from Europe were unreliable on the whole. Traveling through the United States in 1794, Wansey wrote about the S.U.M., observing, "the roguery of the different managers, placed at different times at the head of it, chiefly men of ruined fortunes from England, who undertook it merely to aggrandize themselves."[111] The vast undeveloped land on the American frontier likewise distracted the European immigrants, according to Wansey: "The English workmen are dissatisfied, and ready to leave the factory as soon as they have saved up a few pounds, in order to become landholders up the country, and arrive at independence."[112] Thus, the S.U.M. experienced a tremendous turnover of skilled mechanics and laborers over the company's brief tenure of manufacturing.

Though the initial S.U.M. experiment appeared to be over by 1796, the physical and corporate apparatus remained intact, perhaps waiting for a more opportune moment to ride the inevitable industrial wave to come. The business plan would be altered—it already had been altered—but the eventual outcome would essentially fulfill the vision of Alexander Hamilton.

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[111] Bagnall, *The Textile Industries*, 182. Pierre L'Enfant also alluded to this in his December 25, 1792, report to the directors.

[112] As cited in Davis, *Essays, No. I–III*, 498.

CHAPTER 4

S.U.M. AFTER 1800, A PLATFORM FOR TECHNOLOGICAL INNOVATIONS

> Every generation takes up the march of improvement, where its predecessors had stopped, and every generation leaves to its successors an increased circle of advantages and acquisitions.
>
> Jacob Bigelow
> *Elements of Technology,* 1829

Introduction

Like a phoenix rising from the ashes, the dormant S.U.M. awakened as the nineteenth century arrived. On February 15, 1802, a meeting of the directors indicated a renewed determination to save the corporation. S.U.M. Governor John N. Cumming (also known as "General Cumming") and Director Samuel Baldwin formed the committee assigned to oversee the sale or lease of Society property, "as they shall judge for the advantage of the Society." The directors had received "several applications… for the renting of part of the cotton mill and its machinery," and they hoped to lease out the printing shop, bleaching field, sawmill, and grist mill as well.[1] It was a glimmer of hope after a gloomy five years of inactivity.

Despite the disappointment of the S.U.M. experiment in the previous decade, the spirit of American manufactures was alive and well among individual entrepreneurs who saw the waterpower system at Paterson as an opportunity, rather than a white elephant. At Paterson, a company could establish a manufactory without the large start-up costs of acquiring land and water rights, and building a dam and raceway. It was a revised business plan for the S.U.M., as landlord and power-supply company, rather than direct manufacturer, and it would lead to extensive new raceway construction over the next four decades. By the 1840s, Paterson was a shining example of American innovation and manufacturing.

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[1] "Directors Minutes, S.U.M., Vol. 1, Part 1," 125, Paterson Museum, Paterson, NJ. From 1797 to 1802, S.U.M. governor Elisha Boudinot oversaw the affairs of the Society in lieu of a superintendent and without Board of Directors oversight. (Clayton and Nelson, *History of Bergen and Passaic Counties*, 410)

If Alexander Hamilton had lived to see it, he would have been proud of the seed he had planted.[2]

By 1860, the United States trailed only Great Britain and France in manufacturing output. The transformation of Paterson into a thriving industrial city by the middle of the nineteenth century mirrored the growth of manufacturing and urbanization elsewhere in the United States. European immigration into the manufacturing cities of the northeastern states and the enslaved labor of African Americans on the cotton plantations of the South fueled much of that growth. Technological developments in stationary steam engines improved transportation (river shipping and railroads) and provided a power source for factories located outside of the traditional waterpower-rich New England and Mid-Atlantic states. By the end of the century, manufacturers in the smaller inland cities like Paterson were competing with those more strategically positioned in port cities like Baltimore and western railroad hub cities like Chicago.

The US Economy at the Turn of the Nineteenth Century

By the time Thomas Jefferson took office as President of the United States in 1801, his political support for American manufacturing had shifted. The Federalist policies of Alexander Hamilton nurtured and encouraged manufacturing. However, Federalist efforts also sought to improve trade relations with England. In 1794, US Supreme Court Chief Justice John Jay negotiated the so-called "Jay Treaty," an attempt to resolve the trade imbalance, among other ongoing issues between the United State and Britain. However, the United States had little to bargain with and a strong desire to maintain peace with Great Britain. The resulting treaty only minimally advanced American trade prospects and proved wildly unpopular with the public, particularly among mechanics and supporters of manufactures.[3] Even Hamilton's former deputy Tench Coxe turned against the party in favor of Jefferson's Democratic-Republicans. Though Jefferson had always supported domestic (home) manufactures, his political base and the events leading up to the War of 1812 made the Democratic-Republican Party the face of the growing American industrial manufacturing economy.[4]

In February 1802, Tench Coxe sent a copy of his "Reflections on Cotton" to President Thomas Jefferson, which began: "Every fact and reflexion upon the subject of

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[2] Alexander Hamilton was killed in a duel with Aaron Burr in 1804.

[3] "John Jay's Treaty, 1794–95," *Office of the Historian, US Department of State*, accessed 7/31/2019, https://history.state.gov/milestones/1784-1800/jay-treaty.

[4] Lawrence A. Peskin, *Manufacturing Revolution: The Intellectual Origins of Early American Industry* (Baltimore: The Johns Hopkins University Press, 2003), 189–191.

cotton, enhances its importance to our Country."[5] His purpose was to highlight the potential for cotton in the American economy and to encourage "cultivation, exportation & manufactures" of cotton. Coxe's words did not fall on deaf ears. Jefferson championed the agrarian "democracy" (excluding, however, the enslaved African laborers), but was also fascinated with "mechanical devices that cut labor."[6] Jefferson's intent was to improve household or small shop manufactures, not to encourage an American version of "the 'dark satanic' English cotton mills."[7] However, by the first decade of the nineteenth century, the pace of the growing American economy was quickly moving beyond piecework production and events in Europe would bring Jefferson to the defense of industrial manufacturing.[8]

Henry Wansey, a British clothier touring the United States in 1794, observed that American commerce was on the rise, "in consequence of the war in Europe, the carrying trade on the ocean was being transferred from the vessels of the European maritime nations to those of the United States."[9] Indeed, while in 1789 US vessels shipped 123,893 tons of product, by 1798, the total grew to nearly 500,000 tons, and by 1807, to over 800,000 tons of product.[10] Soon the Napoleonic Wars, particularly the conflict between France and England, adversely affected American shipping and agriculture, but provided a boost for American manufacturing.

In the year 1803, the tenuous peace which existed between England and France since the 1801 Treaty of Amiens broke down. Although the United States declared a policy of neutrality, both the British and the French commandeered American merchant vessels to prevent the transport of goods to the other. The British went one step further by impressing American seamen to service on British warships. In 1806, at President Thomas Jefferson's urging, Congress passed the Non-Importation Act, banning the import of products from Great Britain in an attempt to end the practice, but many considered it to be too weak to be effective. The Embargo Act of 1807 placed an embargo on American shipping to British and French ports in an effort to force both governments into recognizing US neutrality. The embargo at first received support from American merchants and farmers, but they soon realized it was more harmful to US trade than it was to either the British or

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5 "Tench Coxe's Reflections on Cotton, 11 February 1802," Hamilton Papers, *Founders Online: National Archives*, accessed 5/8/2019, https://founders.archives.gov/documents/Jefferson/01-36-02-0365.

6 David Freeman Hawke, *Nuts and Bolts of the Past: A History of American Technology*, 1776–1860 (Philadelphia: Harper & Row, 1988), 43.

7 Hawke, *Nuts and Bolts*, 44.

8 Joseph Dorfman, "The Economic Philosophy of Thomas Jefferson," *Political Science Quarterly* 55, no. 1 (1940): 114–115, https://www.jstor.org/stable/2143776.

9 Bagnall, *The Textile Industries*, 183. Wansey is referring to the war resulting from the 1789 French Revolution, pitting France against England and a number of European countries.

10 Benjamin Olney Hough, *Ocean Traffic and Trade, Volume 16* (Chicago: LaSalle Extension University, 1916), 331.

the French.[11] From the port of Baltimore, flour exports decreased by half between 1807 and 1808 and cotton exports fell from over 143,000 bags to just under 25,500 bags.[12]

The embargo had a more positive effect on American manufacturing. Reminiscent of the 1780s movement to encourage manufactures, the first decade of the nineteenth century brought renewed calls for the development of domestic industries to end the United States' dependence on foreign imports. In the port city of Philadelphia, Tench Coxe initiated a revival of the Pennsylvania Society for the Encouragement of Manufactures in 1803. New associations also formed, including the Domestic Society and Philadelphia Premium Society, to operate merchant warehouses serving as intermediaries for the sale of American-made products to American markets. Movement founders knew there was a need for change—changes in capital investments toward local manufacturers, developing local or regional marketing networks for American raw materials, and changing the long-held American preference for imported products (particularly clothing). In Baltimore, members of the Maryland Association for the Encouragement of Domestic Manufactures made a public pledge to wear only "American-made" clothing, with the caveat, "as far as practicable."[13] The movement would prove to be advantageous for Paterson and the S.U.M. as well (see below).

The unpopular embargo ended in 1809 when Thomas Jefferson left office. Despite James Madison's follow-up attempts at economic sanctions, British and French warships continued to harass American merchant ships. The British were most aggressive, forcing sailors onto their warships and confiscating cargoes. Merchants, farmers, and millers were vocal in their opposition to government policies intended to force England and France to recognize American sovereignty. They wanted a declaration of war on Great Britain over the issue of impressment of sailors and taking of cargo. President Madison called for a declaration of war on June 1, 1812, and Congress responded with a positive vote. The disruptions of the war lasted until February 1815, when the US Senate ratified the Treaty of Ghent, ending the conflict.

Many of the factories established during this period of upheaval did not survive after the cessation of hostilities with England in 1815. Those that did continue, particularly textiles, iron, steel, and firearms, formed the core of industrialization in the United States through the nineteenth century. Building on the foundation of corporations like the

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[11] Peskin, *Manufacturing Revolution*, 164; Bagnall, *The Textile Industries*, 488. This paragraph and the next three paragraphs are largely taken from Paula S. Reed & Associates (Edie Wallace and Paula Reed), "Union Dam and Mill Race," Maryland Inventory of Historic Properties, #HO-534, 2008, Historic Context, Section 8, page 1.

[12] Richard Walsh and William Lloyd Fox, *Maryland A History* (Maryland Historical Society, Baltimore, MD, 1974), 176; G. W. Daniels, "American Cotton Trade with Liverpool Under the Embargo and Non-Intercourse Acts," *The American Historical Review* 21, no. 2 (Jan., 1916): 278, www.jstor.org/stable/1835050.

[13] Peskin, *Manufacturing Revolution*, 164–167.

S.U.M., a growing majority of manufactures, particularly in the New York and Boston areas, were chartered corporations.[14]

S.U.M. Infrastructure Makes Paterson a Destination for Industrial Growth

Beginning about 1800, under the direction of then-S.U.M. governor Elisha Boudinot the first project undertaken by the rejuvenated S.U.M. was to extend the existing raceway to increase the number of mill sites available for lease or sale. Both Philip Schuyler and Pierre L'Enfant proposed a future extended system for that purpose, as did Peter Colt in 1794. Colt's proposal was a practical extension of the existing raceway, here described by Russell Fries (1975):

> going north from the present location of the first mill at Passaic and Mill Streets parallel with Mill Street along the side of the hill towards the river. He also planned to use the tail race from the cotton mill to drive another set of mills along the brow of the hill above the river itself (corresponding to the present lower canal along Van Houten Street).[15]

In fact, as constructed between 1800 and 1807, the tailrace ran parallel to the original raceway and its extended section, while Colt's proposed "tail race from the cotton mill to drive another set of mills" became the Lower Raceway paralleling the river.[16] The initial raceway extension bore fruit in 1801 with the construction of the "Yellow Mill," a paper mill operated by Charles Kinsey and Israel Crane.[17]

During this period, the S.U.M. cotton mill was occupied by two manufacturing concerns: John Parke, who produced candlewicks, and John Clark, who built cotton machinery "of the Arkwright system of carding and spinning."[18] Clark came from

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[14] Peskin, *Manufacturing Revolution*, 170. This paragraph and the preceding three paragraphs are largely taken from Paula S. Reed & Associates, "Union Dam and Mill Race," Historic Context, Section 8, page 1.

[15] Fries, "SUM Power Canal System," 49–50, citing "Peter Colt to Nicholas Low," July 13, 1794, Peter Colt MSS. Fries notes that Colt may have gleaned elements of the plan from L'Enfant and the millwright, Luke Usher. (Fries, 51) See also Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls*, 2.33–2.34.

[16] James Lee, "Paterson Raceways: Research and Documentation Report," Historic Structures Research & Documentation Branch, Historic Architecture, Conservation and Engineering Center, Lowell, Massachusetts, 2013, 9.

[17] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls*, 2.33; see also Davis, *Essays, No. I–III*, 505. A remnant of the "Yellow Mill" is visible in the walls of the Essex Mill Apartment Complex located on Mill Street just inside of the Park boundary.

[18] Bagnall, *The Textile Industries*, 188. The recently discovered "Mill Pay List" from 1797, located by local Paterson historian Glenn Corbett, indicates that Parke may have begun his operations as early as 1797, although Parke was not listed as an employee. The list also included John Clarke [sic], the highest paid employee, from July through October.

Providence, Rhode Island, but chose to settle in Paterson. He reportedly supplied machines for "the second cotton mill in Beverly, Mass.," and for James Beaumont, who established a mill in Canton, Ohio, in 1801.[19] In 1807, the S.U.M. cotton mill burned to the ground, displacing both the Parke and Clark manufactories. John Clark built a new shop known as "Little Beaver Mill" (no longer extant), located on a riverside mill seat leased from the S.U.M., where he remained until 1816.[20] John Parke determined to build his own mill along the recently completed new raceway, here described by New Jersey historian William Nelson (1882):

> Within six months after the destruction of this mill, Parke had begun the erection of another on what was then called Boudinot Street, but is now Van Houten Street, nearly opposite Cross Street. He prudently put up only a small frame building, one story high probably, pretty well back towards the river, so as to get the full head of water from the new raceway, which was then but recently constructed… Times prospered with Mr. Parke, and he soon was able to enlarge his modest little mill. After a while, probably during the winter of 1810–11, he built a brick and stone mill… [21]

According to Nelson, John Parke's cotton mill prospered through the embargo and ensuing war with England, but with the cessation of hostilities in 1815, the domestic cotton market collapsed and "he went down with every other manufacturer in Paterson."[22]

In 1810, however, Nelson reported that Paterson was humming with activity, citing the Essex County manufacturing statistics for that year:

The production of cotton, linen, and woolen cloth for the year amounted to 201,836 yards in families, and 456,250 yards of cotton goods, such as cassimeres, stripes, checks, shirtings, corduroys, and fancy goods. There were 585 looms in operation,—102 for weaving cotton goods, of which 70 were driven by water-power.[23]

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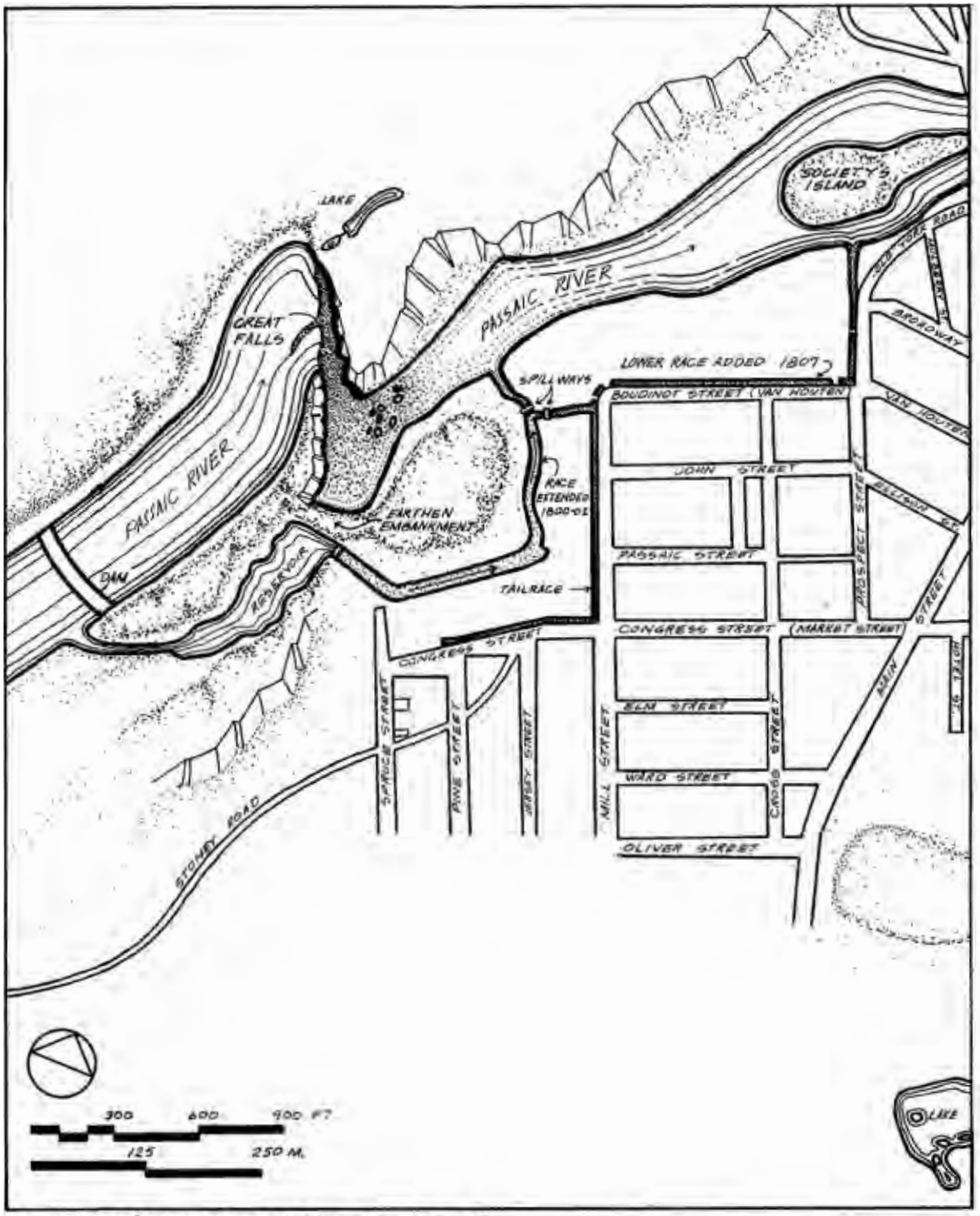
[19] Bagnall, *The Textile Industries*, 188; George T. Comeau, "True Tales from Canton's Past: A Long Trip for Hank Williams' coat," *Canton Citizen*, accessed 5/10/2019, www.thecantoncitizen.com/2011/08/03/true-tales-hank-williams.

[20] Clayton and Nelson, *History of Bergen and Passaic,* 421.

[21] Clayton and Nelson, *History of Bergen and Passaic,* 411. Parke's second, brick and stone mill was later expanded and eventually became "one of the principle structures" of the Phoenix Silk Mill complex.

[22] Clayton and Nelson, *History of Bergen and Passaic,* 411.

[23] Clayton and Nelson, *History of Bergen and Passaic*, 411. The reference to "201,836 yards in families" presumably means cloth produced on looms in private homes.



PATERSON RACEWAYS, [1800-27]

THIS SHEET SHOWS THE EXPANSION OF THE RACEWAY SYSTEM WHICH BEGAN IN 1800, WITH THE EXTENSION OF THE RACEWAY ALONG THE SIDE OF THE HILL BEYOND THE SITE OF THE FIRST MILL TO SUPPLY THE ESSEX MILL WITH WATER. IN 1807 S.U.M. ADDED A RACEWAY ALONG BOUDINOT (NOW VAN HOUTEN) STREET AND THE TAILRACE ALONG MILL STREET, ELIMINATING THE OLD DRAINAGE DITCH.
SOURCE: CONCEPTUAL MAP BASED ON HISTORICAL DOCUMENTATION AND 1" = 100' MAP. MAP PREPARED BY THE HISTORIC AMERICAN ENGINEERING RECORD, HAER.

Figure 27: HAER map, “Paterson Raceways 1800–1827” (Library of Congress)

Figure 28: Thomas Whitley, oil painting of the Nail Factory, circa 1835 (Passaic County Historical Society)

The county record also enumerated, "3146 spindles in motion in cotton manufactories" and "9140 spindles prepared to go into operation, and 500 for spinning flax," all of which historian William Nelson considered "very likely an exaggeration." Still, the numbers indicated the relatively impressive state of manufacturing in Paterson in 1810. Additionally, several new mills were established over the next five years, here listed from Nelson:

> **Capt. Richard Ward—cotton mill** established 1811 on "Boudinot Street, just west of Mr. Parke"; this became John Nightingale's bleachery about 1830.
>
> **Aaron and Robert King—cotton mill**, about 1811, on Congress (Market) Street; about 1821 they moved to the former Park mill, "where their establishment was known as the 'Phoenix Cotton-Mill'."
>
> **Isaac Classen**—"a large mill on the middle race, about opposite Passaic Street," built 1812–1813 and called the **Franklin or Red Mill**. (cotton mill?)
>
> **Daniel Holsman**—the **Home Mill** on Boudinot Street (cotton mill?) "where J.C. Todd & Simonton's machine works now are."

> **Caleb Munson Godwin**—cotton spinning mill known as **Munson Godwin's Mill**, built "about 1813–14, possibly earlier," "large stone mill on the middle race, on Congress Street." (later part of the Danforth Locomotive Works)
>
> **Harmony Mill**—built on Boudinot Street before 1816, owner unknown, leased in 1816 by Warren Haight, a carpet manufacturer.
>
> **Industry Mill**—"first mill on Boudinot Street from Prospect," built before 1816, owner unknown; purchased cotton mill about 1816 by **Robert Morrell**.
>
> **Henry Morris**—the **Hamilton Mill**, on Mill Street, a cotton mill "built about 1814. . . said to have been the only Paterson manufacturer who did not fail after the war of 1812."[24]

Oddly, Nelson did not list the Samuel Colt & Company rolling mill and nail factory, built in 1812 near the spillway at the end of the middle race.[25] Colt & Company was one of four incorporated manufacturers in Paterson in the early decades of the nineteenth century. The others, Beaver Woolen Factory, Essex County Manufacturing Company, and Passaic Manufacturing Company, operated in Paterson by January 1815. Statistics given for Paterson in 1814 listed "eleven cotton mills. . . one card and wire factory, one rolling mill, and one saw mill; and a population of about 1500."[26]

The S.U.M. raceway improvements between 1801 and 1807 were clearly a boon to the business of land sales and waterpower leases. However, the 1807 cotton mill fire destroyed the S.U.M.'s most valuable asset, according to state reports. In 1809, the value of S.U.M. shares remained depressed at just "three dollars per share," though expected to rise with the value of the newly available mill seats.[27] In a move which would prove to be profitable for himself and for the S.U.M., Roswell L. Colt, eldest son of Peter Colt, began purchasing S.U.M. stock around this time, eventually acquiring a majority ownership in the corporation by 1814.[28]

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[24] Clayton and Nelson, *History of Bergen and Passaic*, 411–413.

[25] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls*, 2.34, 2.39. Hunter Research (page 2.40) discussion of the date of the painting: "A card affixed to the rear of the painting reads: "The Nail Factory at the foot of Broadway at the Pitch of the Race way Painted by Thomas Whitley – cir 1850 – Presented by Mrs. James H. Rogers." Current thinking is that the painting shows John Colt's rolling mill and nail factory, which formerly occupied the site of the Gun Mill at the "pitch" of the Middle Raceway. Assuming this location attribution is correct, since Thomas Whitley immigrated to the United States around 1835 and was based in Paterson from 1835 to 1839, and the mill of the Patent Arms Manufacturing Company was erected in 1836, the painting can be reasonably securely dated to 1835–36."

[26] Davis, *Essays, No. I–III*, 504. In 1797, the population in Paterson was reportedly just 43 persons (Davis, *Essays, No. I-III*, 504, n. 3). Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls*, 2.42, identifies John and Peter Colt as the drivers behind the Passaic Company; Davis, *Essays, No. I–III*, 507, identifies Roswell Colt as a stockholder in the Beaver Company.

[27] Davis, *Essays, No. I–III*, 509 and 511, citing the 1804 Dodd and 1807 Bloomfield reports, and the 1809 Silas Whitehead report to the New Jersey legislature. The value of the cotton mill and its contents was given as over $17,000, while the fire insurance payout was just $6,500. The payout may have funded the lower raceway construction.

[28] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls*, 2.31–32; Davis, *Essays, No. I–III*, 505.

Figure 29: Roswell L. Colt (New York Public Library)

In June 1814, Roswell Colt was elected to the Board of Directors, along with his father Peter Colt, his cousin Samuel Colt, in-laws Robert and John Oliver, and his brother John Colt, who was also appointed the S.U.M. agent of canals, lands, and buildings in April 1814. Several local manufacturers also joined the board, including Robert Collett, Henry Morris, and others, who represented the minority stockholders of the company. The directors elected Roswell Colt as the Governor of the S.U.M.[29]

For the next three decades, the S.U.M. operated essentially as a family business, tightly controlled by Roswell L. Colt. Not only did Colt's father, brother, cousin, and in-laws serve the company in various capacities, but they were also invested in

[29] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.33 (citing S.U.M. Minutes, June 14, 1814); this author's notes from the minutes include several new directors' names not listed by Hunter Research, including Robert Johnston, and more importantly, Samuel Colt. Presumably this would have been the Samuel who was the cousin of Roswell and proprietor of the Samuel Colt & Co. Rolling Mill and Nail Factory (Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.39).

manufacturing enterprises in Paterson, the success of which helped propel Paterson and the S.U.M. toward stability. John Colt, while serving as the primary land agent for the S.U.M., also operated a nail factory with his cousin Samuel Colt, and several cotton mills. John Colt advanced the American duck sailcloth industry with his innovative cotton duck (instead of the traditional linen duck) and produced as much as fifty percent of United States-made cotton duck cloth.[30] Another Colt cousin, also named Samuel Colt, revolutionized the gun-making industry with his patent revolver, first assembled 1837 in a new factory built on the site of the old Colt Rolling Mill and Nail Factory.[31]

Roswell Colt shared his father's interest in the financial side of industry and is largely credited with transforming the S.U.M. into a profitable corporation. During his four decades at the head of the S.U.M. Roswell Colt oversaw the enlargement of the raceway system by which new mill seat and waterpower leases fueled a boom in cotton cloth and machine manufacturing. He opened the company to greater investment as he negotiated the exchange of stock held by the state of New Jersey for land in Paterson, and in the 1830s oversaw the company's successful litigation against the Morris Canal and Banking Company.[32] While Roswell Colt's tenure as the governor and majority stockholder of the S.U.M. included a great deal of controversy over his private dealings, the company and the town of Paterson thrived under his leadership.[33]

As Roswell Colt assumed the leadership of the S.U.M. in October 1814, the directors voted "to recommence a Cotton Manufactory" as soon as possible. Colt, however, took the company in the opposite direction, setting aside the manufacturing clause in the S.U.M. charter to pursue the more profitable business of sale/lease of mill seats and providing waterpower. This change was used (unsuccessfully) as an argument in several court cases, claiming the Society had "violated its charter" in its shift away from direct manufacturing.[34] The move, however, proved to be advantageous to the S.U.M., and by 1820, factories occupied nearly all the available mill lots.[35] The growth in manufactures stimulated sales and leases of S.U.M.-owned Paterson town lots as well. Both created a much-needed steady revenue stream for the company.

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[30] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.43.

[31] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.55. This was not the same Samuel Colt who served on the S.U.M. board of directors. Samuel Colt, the gun maker, was a grandnephew of Peter Colt.

[32] Davis, *Essays, No. I–III*, 513–517.

[33] For a detailed discussion of the Colt family and Roswell L. Colt's questionable financial dealings with the S.U.M., see Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* chapter 2.

[34] Davis, *Essays, No. I–III,* 514; Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.46. The courts found that although the S.U.M. was not itself engaged in manufacturing, it was facilitating manufactures and therefore still honoring its charter. See *Wilentz v. Society, c., Useful Manufactures,* 118 N.J.L. 20, accessed 11/19/2019, https://casetext.com/case/wilentz-v-society-c-useful-manufactures for reference to previous court cases.

[35] "A Map of the Village of Paterson, 1820, as traced by the WPA," in Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.37.

The expansion continued through the 1820s, growing to fifteen cotton factories by 1827, according to a census recorded by local Presbyterian minister Rev. Samuel Fisher. Fisher noted 24,354 spindles and 281 power looms running in Paterson factories, producing over two million pounds of yarn—some exported to New York and Philadelphia markets—and nearly four million yards of cotton cloth and duck (sailcloth).[36] Following is Fisher's list of Paterson's fifteen cotton manufactories, their equipment, and number employed in 1827:

Rutgers Cotton Factory—John W. Berry & Co.—cotton cloth
2,500 spindles, 45 power looms, employed 20 men, 25 women, 47 children

Harmony Cotton Factory—Warren Haight—exported yarn/umbrella cloth
1,000 spindles, 8 power looms, employed 9 men, 7 women, 34 children

Union Cotton Factory—Clarke & Robinson—exported yarn
888 spindles, employed 2 men, 4 women, 22 children

Phenix [sic] **Cotton Mills**—Aaron & Robert King—exported yarn
1,510 spindles, employed 6 men, 24 women, 26 children

Phenix Manufacturing Co.—J. Travers—linen yarn for export and duck cloth
1,200 spindles, 52 power looms, 20 hand looms, employed 89 men, 81 women, 114 children

Passaic Cotton Factory—Adrian Van Houton—cotton yarn and cloth
1,632 spindles, 30 power looms, employed 12 men, 20 women, 33 children

Home Cotton Factory—Daniel Holsman—cotton yarn and cloth
2,016 spindles, 40 power looms, employed 21 men, 27 women, 49 children

Cotton & Duck Factory—John Colt—cotton/linen yard, cotton/linen duck
336 flax spindles, 444 cotton spindles, 32 power looms, 30 factory hand looms, 30 private hand looms, employed 12 men, 52 women, 29 children

Essex Cotton Factory—John Colt—cotton yarn for export and local
2,100 spindles, employed 8 men, 7 women, 55 children

Franklin Cotton Factory—Daniel Holsman—cotton yarn
2,800 spindles, employed 13 men, 21 women, 56 children

Hope Cotton Factory—Joseph Smith & Co.—cotton yarn export and cloth
2,904 spindles, 48 power looms, employed 12 men, 46 women, 41 children

Fayette Cotton Factory—John Parke—cotton yarn for export
780 spindles, employed 5 men, 10 women, 40 children

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[36] "Census of Paterson, NJ," 1827 "Statistical account of the town of Paterson," Paterson Museum archives, Paterson, NJ.

Cotton Factory—A. & R. Carrick—cotton yarn for export and cloth
3,000 spindles, 60 power looms, employed 15 men, 50 women, 60 children

Columbian Cotton Factory—C. H. Godwin—cotton yarn for export
1,224 spindles, employed 2 men, 5 women, 26 children

Cotton Factory—Godwin, Rogers & Co.—cotton yarn for export and some cloth
1,500 spindles, 2 power looms, employed 4 men, 11 women, 45 children37

Godwin, Rogers & Co. operated a machine shop employing sixty-eight men and a foundry with thirteen men. Fisher additionally listed two other machine shops, one operated by Henry Post (ten men) and the other by Clough & Hall (six men), and John Colt's Rolling Mill & Nail Factory, which employed twenty-five men and produced over 850,000 nails annually.[38] Rogers—the same Thomas Rogers who later established the Rogers Locomotive Co.—reportedly designed the power loom for John Colt's cotton duck factory. It was a first-of-its-kind power loom capable of weaving the difficult "doubled and twisted" yarn for cotton duck cloth.[39] Colt's cotton duck sailcloth was reportedly used on "all American vessels," both US government and merchant marine.[40]

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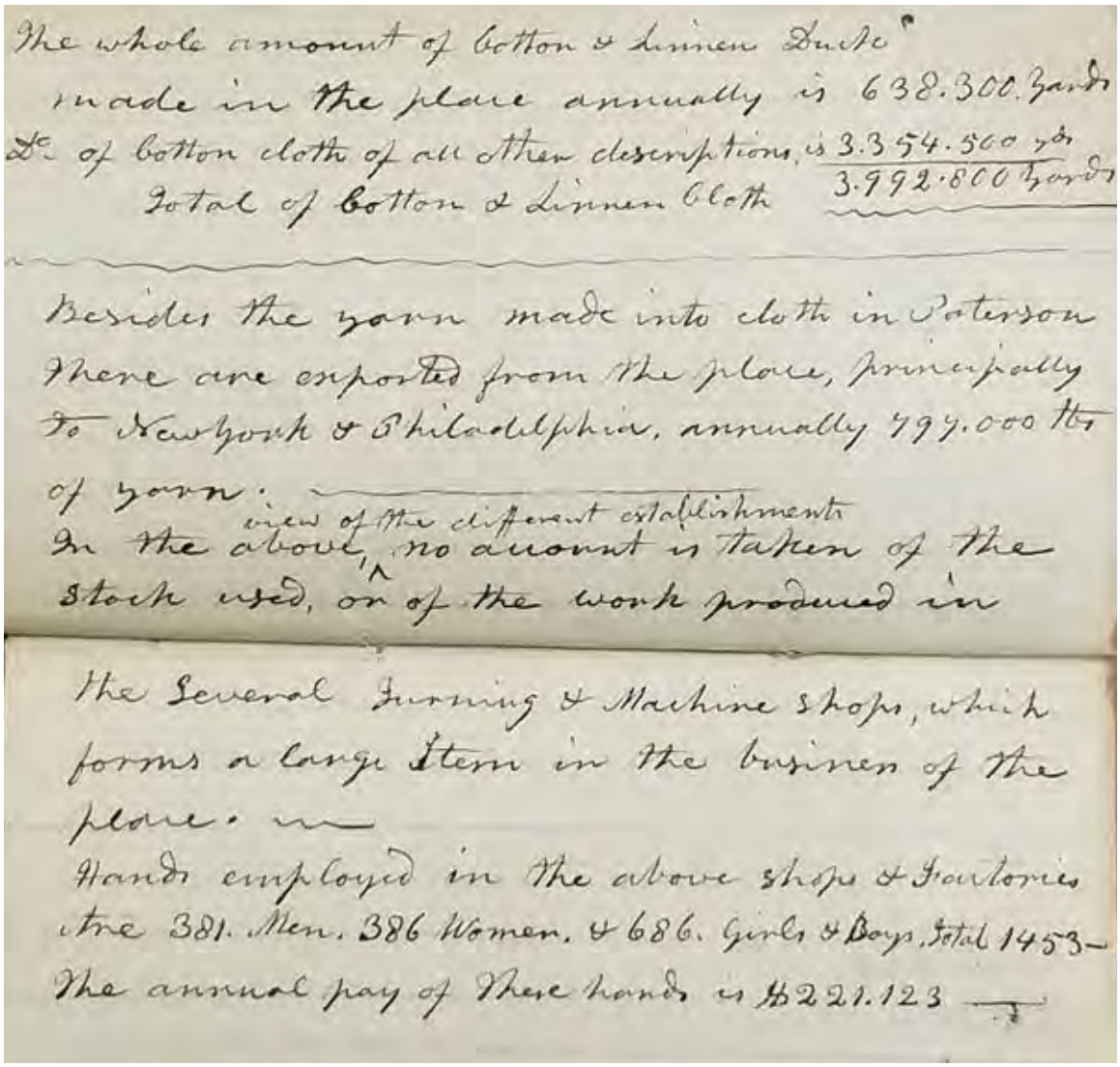
[37] "Census of Paterson, NJ," 1827 "Statistical account of the town of Paterson," Paterson Museum archives, Paterson, NJ.

[38] "Census July 4th 1827," Census of Paterson, NJ collection, Paterson Museum, Paterson, NJ. In his 1829 census, Fisher noted that the "Machine factories.. . where cotton machinery of different descriptions is made.. . is said by competent judges to be superior to any other manufactured in America."

[39] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.42.

[40] Clayton and Nelson, *History of Bergen and Passaic,* 413.


The whole amount of Cotton & Linnen Duck
made in the place annually is 638.300 Yards
&c. of cotton cloth of all other descriptions, is 3.354.500 yds
Total of Cotton & Linnen Cloth 3.992.800 Yards

Besides the yarn made into cloth in Paterson
there are exported from the place, principally
to Newyork & Philadelphia, annually 799.000 lbs
of yarn.
In the above, no account is taken of the
Stock used, or of the work produced in
the several different establishments
the Several Turning & Machine shops, which
forms a large Item in the business of the
place.
Hands employed in the above Shops & Factories
are 381. Men. 386 Women. & 686. Girls & Boys. Total 1453
The annual pay of these hands is $221.123

Figure 30: Two pages from Reverend Samuel Fisher's 1827 census (Paterson Museum)

The S.U.M. profits accrued by the growth of Paterson manufacturing in the 1820s provided the capital needed to expand the waterworks again.[41] Between 1827 and 1829, the S.U.M. constructed a third raceway, commonly known as the Upper Raceway. This raceway diverted the original eastward flow of water from the reservoir to a line flowing southward then turning back northward above and parallel to Spruce Street, here described by architectural conservator James Lee (2013):

[41] John Kean, in his 1845 lawsuit filed against Roswell Colt, stated "That large sums of money have been received by the said Colt, under some arrangement with D. S. Gregory and others, in reference to the lottery privilege granted by the charter," claiming that Colt diverted most of that money to his own use in building the Roswell Mansion (George B. Halstead, *Reports of Cases Determined in the Court of Chancery, Vol. I* (Elizabethtown: Printed by E. Sanderson, 1849), 368). Davis suggested that possibly some of the lottery money was actually used "to increase advantageously their investment in the town" (Davis, *Essays, No. I–III*, 516).

> The creation of the Upper Raceway "involved raising the level of the whole system that supplied water to the canals almost to the base of the river in order to gain a further head of twenty-two feet for the new mill-sites" (Fries 1973, 62). The new section made a sharp turn south below the reservoir, and directed the water toward the south end of Spruce Street. The Upper Raceway was cut into the hillside, and the fill was used to build an embankment between the Upper Raceway and Tailrace. There was a sluice with a control gate at the north end of the Upper Raceway, and weir and spillway at the south end. The mills along Spruce Street drew water from the Upper Raceway via flumes, and the waste water was expelled into the Upper Tailrace. Once the water made its way to the tailrace it flowed north toward the older section of the system, which became the Middle Raceway. Since Spruce Street sloped from north-south and the water needed to flow from south-north, the grade of the tailrace was also raised with fill.[42]

Lee additionally identified a feeder canal, constructed in 1830 between the river and the reservoir. Lock gates allowed boats to move from the river to the reservoir and along the Upper Raceway. These improvements created a remarkable system of tiered raceways which allowed for a great deal of industrial activity in a relatively small area.

By 1832, Paterson's manufacturing community included nineteen cotton mills (including Colt's cotton duck mill), one linen duck mill, one wool (Satinet) mill, two button factories, one paper mill "nearly finished," two bleaching companies, four "Turning Establishments," and four millwright companies. There was also the new "Paul & Briggs" four-story building designed for their millwright works with additional room for 4,000 spindles, and four other machine factories—including the new Rogers, Ketchum & Grosvenor four-story building with additional room for 5,000 spindles. These shops and factories employed over 2,400 men, women, and children, close to doubling the number employed in 1827 (~1,500). Several of the larger cotton mills and machine shops employed from 100 to more than 200 hands and the largest mill [name unknown due to torn page, possibly Joseph Smith's Hope Mill] listed 381 hands.[43]

A map of Paterson drawn in 1840 showed large industrial buildings along all three of the S.U.M. raceways. The town plat extended to both sides of the Passaic with numerous streets laid out within the town boundary. Paterson became a separate township in 1831, carved from the ancient Acquackanonk Township, and in 1837, it was designated the county seat of Passaic County. The city was incorporated by state charter in 1851, officially severing its existence within the S.U.M. charter.[44] The 1840 map showed the serpentine

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[42] Lee, "Paterson Raceways Research," 9, citing Russel Fries, "Great Falls, S.U.M. Survey. A Report on the first Summers Work." Historic American Engineering Record, February, 1973.

[43] "Census of Paterson, NJ," 1832 "A Statistical view of the Manufacturing Establishments, Machine shops, &c in Paterson NJ," Paterson Museum archives, Paterson, NJ.

[44] Davis, *Essays, No. I–III*, 516; Clayton and Nelson, *History of Bergen and Passaic*, 408–409.

Morris Canal, completed between Phillipsburg and Jersey City by 1836, which wound its way just south of the S.U.M. reservoir, but connected to the reservoir by a short "raceway."[45] Much like the canal envisioned by William Duer and Monsieur Allou, the Morris Canal provided a valuable transportation option for the products of Paterson's factories. However, it did not come without controversy.

Figure 31: Van Hagener, Map of the Town of Paterson, NJ, 1840
(Clayton and Nelson, History of Bergen and Passaic, p. 406)

The Morris Canal and Banking Company was incorporated by the state of New Jersey in 1824, "to unite the river Delaware, near Easton, with the tide waters of the Passaic."[46] Among the subscription commissioners named in the charter was David B. Ogden, son of Samuel Ogden who unsuccessfully lobbied the S.U.M. to build the Duer-Allon (Allou) canal system. The canal charter allowed for use of the water from Lake Hopatcung and Green Pond, but in 1829, the company devised a plan to use the waters of

[45] Lee, "Paterson Raceways Research," 10.

[46] Morris Canal and Banking Company, The Charter of the Morris Canal and Banking Company and the Several Acts of the Legislature in Relation Thereto (Jersey City: Office of the Bergan Courier, 1832), *HathiTrust Digital Library*, accessed 11/19/2019, https://catalog.hathitrust.org/Record/008610407.

Rockaway River, a tributary of the Passaic, as a section of the canal. In October 1830, the S.U.M. brought suit in New Jersey Chancery Court against the Morris Canal and Banking Company. They claimed that on four occasions in July through September, during the construction of the canal, the company had:

> caused large quantities of water to be drawn out of the Rockaway—sometimes for the purpose of trying their inclined planes, and at other times for the purpose of puddling their canal—by means whereof great, sudden, and unusual depression and diminution of the quantity of water in the said Passaic river have been experienced at Paterson, and the manufactories there prevented from performing their usual operations, and some portion of the machinery has actually stopped for the want of water. . . . That the Society are entitled to the natural flow of the river, without liability to the dangers that may result from any interference on the part of the Company. The bill then prays that the Canal Company may be *injoined* [sic] from diverting in any wise any of the waters of the Passaic or its tributary streams, and that an account may be taken of the damages already sustained. [47]

Part of Morris Canal and Banking Company's defense was that the S.U.M. was not in compliance with its charter since it ceased direct manufacturing in 1796 and thus was no longer entitled to the water rights given in their charter. The presiding Chancellor threw out the notion that the S.U.M. was no longer a viable corporation and acknowledged the S.U.M.'s right to the waters of the Passaic as "clear, vested, and prior rights; and the enjoyment of them in their full extent will be secured." Noting that the Morris Canal was still under construction, the Chancellor refused the injunction against the canal company, but admonished them to resolve their water supply needs to the satisfaction of the S.U.M., "Important interests are involved in the solution."[48]

The two companies finally reached an agreement in 1836, in which a raceway was installed leading from the Morris Canal to the S.U.M. reservoir to return Passaic water used by the canal to the S.U.M. water system. Ongoing disputes over the water flow, however, resulted in the permanent closure of that connection by the canal company in 1845. The quarrels between the two companies continued through the nineteenth century, but the canal became obsolete by the turn of the century because of railroad competition. In 1923, the Morris Canal assets, then owned by the Lehigh Valley Railroad Company, were transferred to the state of New Jersey.[49]

The S.U.M. made its last major alterations to the waterpower system in 1838, when they installed a new stone dam across the Passaic River, and in 1846, when they eliminated

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[47] New Jersey Court of Chancery, New Jersey Equity Reports, Volume 1 (Elizabeth-Town: Printed by E. Sanderson, 1836), 158, *https://books.google.com/books?id=rk4tAQAAMAAJ&dq=The+Morris+-Canal+and+Banking+Company+v.+The+Society+for+Establishing+Useful+Manufactures*.

[48] New Jersey Court of Chancery, *New Jersey Equity Reports, Volume 1*, 193.

[49] Lee, "Paterson Raceways Research," 10.

the reservoir. The new dam, located closer to the Falls, "created a larger storage area of water for the increased hydraulic power demand," which "essentially made the reservoir redundant" notes James Lee in his "Paterson Raceways Research and Documentation" report. Thus, the second alteration in 1846 involved cutting a new channel "from the river to the west end of the Upper Raceway; eliminating the reservoir, and alleviating problems with leaking in the reservoir."[50] Fifty years earlier Pierre L'Enfant forewarned the S.U.M. that just such a problem would occur should they chose to impound their reservoir in the "cove" and it appears that he was indeed correct.

The remarkable growth of manufacturing in Paterson through the first half of the nineteenth century was largely driven by manufactures of cotton products. Increased production in Paterson, and in the larger mill developments in New England, correlates with significant increases in cotton plant production in the southern states. In 1795, US cotton growers produced eight million pounds of cotton "lint." By 1800, that number grew to thirty-five million pounds; in 1825, to 255 million pounds; and by 1848, topped one billion pounds of cotton lint.[51] The growth in cotton production in the South was directly linked to the increasing enslaved African American population in the United States between 1790 and 1860.[52] This economic system founded upon enslaved labor, particularly on the cotton plantations of the South, was at the heart of the sectional divide which led to the American Civil War. Ironically, the Northern cotton mills were, by extension, implicated in the perpetuation of slavery even as they fought to end the institution.

Even after the interruptions of the American Civil War (1861–1865), and despite the loss of enslaved labor in the South (though largely replaced by the equally oppressive sharecropping system), cotton continued to flow northward. Cotton yarn and cloth production remained the most significant segment of Paterson manufacturing. Indeed, in 1866, the Arkwright Manufacturing Co. opened a new brick cotton mill on Beech Street, joining the new brick Empire Mill located on the corner of Jackson and Slater Streets. Historian William Nelson identified at least fifteen cotton mills still in operation in 1868.[53]

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[50] Lee, "Paterson Raceways Research," 10.

[51] *Cotton Crop of the United States, 1790–1911*, US Dept. of Agriculture, Bureau of Statistics, Circular 32 (Washington: Government Printing Office, 1912), 5–6, accessed 5/15/2019, https://archive.org/details/CAT31313729/page/n5.

[52] Campbell Gibson and Kay Jung, "Historical Census Statistics On Population Totals By Race, 1790 to 1990, and By Hispanic Origin, 1970 to 1990, For Large Cities And Other Urban Places In The United States," Population Division, Working Paper No. 76, US Census Bureau, Washington, D.C., February 2005, accessed 6/25/2019, US Census Bureau, www.census.gov/population/www/techpap.html. See Edward E. Baptist, *The Half Has Never Been Told: Slavery and the Making of American Capitalism* (New York: Basic Books, 2014) for excellent discussion of the link between cotton produced by the forced labor of enslaved African Americans in the American South and the cotton factories of the northern states and England.

[53] Clayton and Nelson, *History of Bergen and Passaic*, 414–415.

Figure 32: Reproduction of Rogers No. 119 at Golden Spike National Historical Park, Utah. Inset: close-up of the Great Falls of the Passaic inlay. (photos by author, 2009)

Innovative Technologies and the Industrial Revolution

The establishment of the S.U.M. in 1791 was at the very beginning of the American Industrial Revolution. It closely followed the opening of Samuel Slater's cotton mill in 1790, considered by many historians to be the start of that period of dramatic technological and social change. Great Britain, of course, underwent its own revolution in manufacturing decades earlier and it was British textile manufacturing technology, brought to the United States by men like Samuel Slater, George Parkinson, William Pearce, Thomas Marshall, William Hall, and others, which revolutionized American industry.

American inventors had not been idle in the previous decade—Oliver Evans invented the automated grain mill in 1782, and John Fitch's first successful steamboat trial occurred in 1787 (patented 1791, improved by Robert Fulton in 1807).[54] However, the revolution begun in the cotton mills of Pawtucket, Rhode Island, and Paterson, New Jersey,

[54] Hawke, *Nuts and Bolts*, 57 and 75.

sparked a wave of American innovations which moved US manufacturing onto the world stage in the nineteenth century.

Though cotton was king in Paterson for many decades, the S.U.M. resources—multiple mill lots with ready access to significant waterpower—provided a platform for the development of new and innovative technologies. From its inception, the S.U.M. was itself an innovation, the vanguard of nationally-scaled industry and corporate capitalization. Men like Alexander Hamilton and Tench Coxe, notes industrial historian Lawrence Peskin, "fervently discussed the need for large-scale American manufacturing a half-century before the Boston Associates built their first factory [at Lowell]."[55] The plans proposed by Philip Schuyler and Pierre L'Enfant for multiple raceways at the Great Falls of the Passaic designed to provide power for a myriad of manufactures were pioneering, though perhaps ahead of their time, and proved eventually to be attainable and profitable for the S.U.M..

American anthropologist Anthony F.C. Wallace observed in his book, *The Social Context of Innovation,* "the direction and speed of technological innovation is inevitably affected by the institutional setting. . ."[56] The S.U.M. provided an institutional setting within which innovation thrived. By the late 1830s, Paterson manufacturing was moving beyond just textiles—that realm belonged increasingly to the mill cities of New England—and embraced the innovative industries linked to the expanding American frontier, guns and locomotives.

In Paterson, as in other manufacturing towns, new technology often grew out of the machine shops in an effort to address a practical need. Among Paterson's earliest mechanics, George Parkinson patented his improvement on the Arkwright water frame (for spinning flax, hemp, and wool) in 1791.[57] In 1792, William Pearce and Thomas Marshall announced their invention of a water-powered *"Ginn"* to remove the seeds from raw cotton, though it failed to perform and was never patented.[58] In the 1820s, it was Thomas Rogers, a partner in the Godwin, Rogers & Co. machine shop, who innovated the power loom capable of meeting the weaving requirements for cotton duck in John Colt's mill.[59]

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[55] Peskin, *Manufacturing Revolution,* 2.

[56] Anthony F.C. Wallace, *The Social Context of Innovation* (Princeton: Princeton University Press, 1982): 3.

[57] Davis, *Essays,* No. I–III, 400.

[58] Davis, *Essays,* No. I–III, 473.

[59] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.42. Abraham Godwin, Jr., Thomas Rogers, and John Clark, Jr. comprised the firm, which occupied the former Little Beaver Mill built by John Clark, Sr. in 1809 (Clayton and Nelson, *History of Bergen and Passaic,* 421).

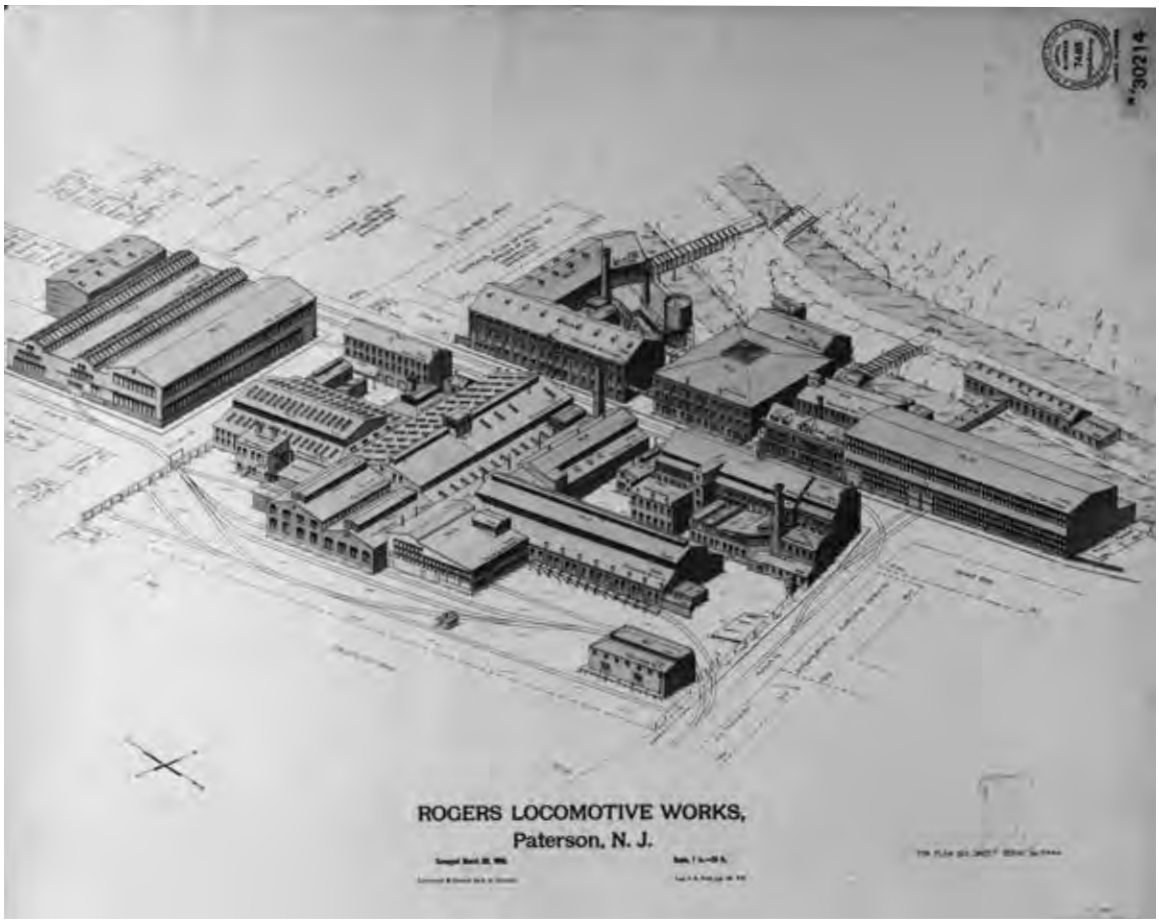

Figure 33: 1906 insurance image of Rogers Locomotive Works (Library of Congress)

Beginning in 1831, Thomas Rogers set out to establish a new manufacturing company backed by New York financiers Morris Ketchum and Jasper Grosvenor. In their new stone four-story building known as the Jefferson Mill and Foundry located on both sides of Spruce Street, the firm manufactured the ironwork for two railroad bridges for the Paterson and Hudson River Railroad (PHRR):

> and about the same time an order came from the South Carolina Railroad for one hundred sets of wheels and axles. These orders directed the attention of Mr. Rogers to railroad work generally… In the fall of 1835 a two-story brick building, forty by one hundred feet, was erected on the east side of Spruce Street, nearly opposite the present office, for a locomotive-shop, by which name it was known for thirty-five years. When the "McNeill" [locomotive for the PHRR] was brought to Paterson it lay for some weeks in pieces, just as it had been brought from England, and nobody was at hand to put it together. This gave Mr. Rogers an excellent opportunity to study its construction… Mr. William Swinburne, who was the pattern-maker for the works, proposed to make the drawings and the patterns for the engine. His offer was gladly accepted, and he went confidently to work, preparing the drawings and

> patterns, and superintending the construction in every department. It was a daring experiment, but after much trying and more than a year of hard work the new engine was completed to the satisfaction of all concerned. It was called the "Sandusky." . . . It was in some respects an improvement on its model [McNeill], Mr. Rogers having introduced a novel feature, "counterbalancing," since adopted in most locomotive engines. For this he filed a specification in the Patent Office, dated July 12, 1837. He also cast the driving-wheels with hollow spokes and rim, and in other particulars anticipated the driving-wheel now in general use on the railroads of America.[60]

Many orders followed to construct locomotives for the rapidly expanding number of railroad companies in the eastern states.

In 1869, the Rogers locomotive Union Pacific No. 119 participated in the "Golden Spike" ceremony celebrating the completion of the Union Pacific Railroad, which spanned the continent. Railroads dominated the transportation market and the Rogers Locomotive Works delivered engines across the country and eventually around the world. Historian William Nelson wrote of the significance of the Rogers Locomotive Works in 1882, "It would take many pages to enumerate all the improvements in the construction of locomotives which have been originated at these works."[61] The success of the Rogers Locomotive Works spawned the establishment of the Danforth Locomotive Works in 1852, Charles Danforth having purchased the former Godwin, Rogers & Co. machine shop, and in 1867, the Grant Locomotive Works.[62]

Just as Thomas Rogers' locomotive innovations were gaining notoriety, a young member of the extended Colt family began his journey with his own groundbreaking innovation. Samuel Colt, son of Christopher Colt and grandnephew of Peter Colt (original superintendent for the S.U.M.), first formulated his design for a revolving gun chamber in 1830 while serving as a midshipman on a merchant ship bound for Calcutta. He carved a wooden model, on which he based his final design.[63] Colt received his patent from the US Patent Office in February 1836.[64]

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[60] Clayton and Nelson, *History of Bergen and Passaic,* 429–430.

[61] Clayton and Nelson, *History of Bergen and Passaic,* 430.

[62] Clayton and Nelson, *History of Bergen and Passaic,* 425, 436.

[63] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.50.

[64] Samuel Colt, "Improvement in Fire-Arms," Patent #US0X0009430, *United States Patent and Trademark Office,* accessed 7/24/2019, http://patft.uspto.gov/netahtml/PTO/search-bool.html (search Patent #X0009430).

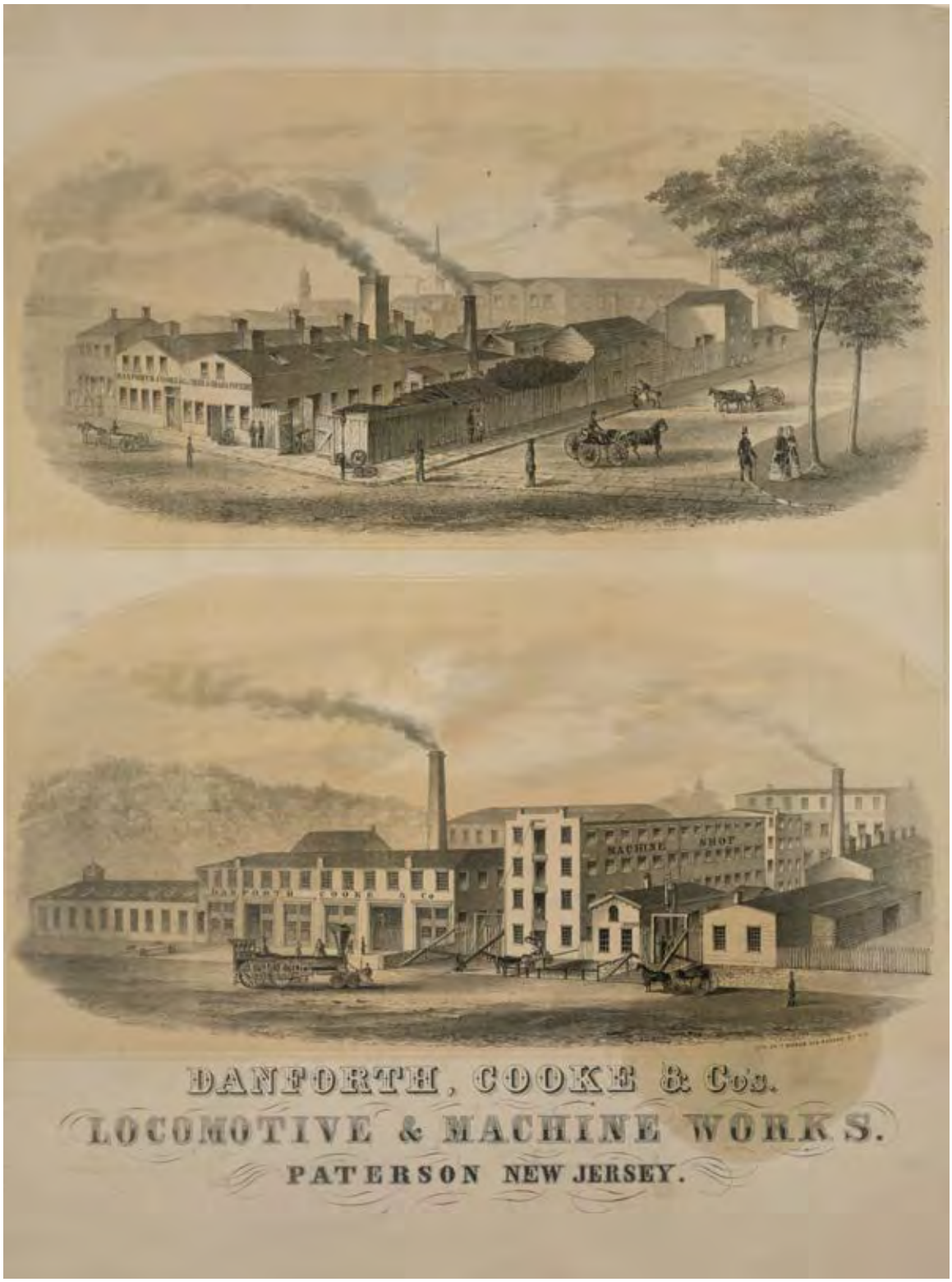

Figure 34: Images of Danforth Locomotive Works, ca. 1900 (Library of Congress)

Samuel Colt's Patent Arms Manufacturing Co. selected the site of the former John Colt Rolling Mill in Paterson to construct a factory building dedicated to firearms production. The mill lot lease, still held by the Colt family (trading as the Paterson Manufacturing Corporation), was transferred to Samuel Colt's company on May 1, 1836. After removing the old rolling mill, the company constructed a "massive new five-story stone factory building. . . dominated by a tall bell tower topped by a gilded weathervane in the form of a Colt rifle" (remnant walls of this building remain standing today).[65] Production began in the spring of 1837. US Army and Navy contracts for guns, anticipated by Colt, never materialized and by 1845, he sold the factory and its contents to cover company debts. Samuel Colt removed to his hometown of Hartford, Connecticut, where he achieved success with his truly innovative design.[66]

It was to the upper floor of the Patent Arms Manufacturing building that Samuel Colt's brother, Christopher Colt, Jr., brought a new line of textile manufacturing to Paterson in 1840. Their father's Connecticut Silk Manufacturing Co., among the first in the country, failed to thrive; Christopher Jr. moved the equipment to Paterson to try his hand at the business of spinning silk yarn.[67] Raw silk production had been contemplated as early as 1794 when the S.U.M. directors ordered "White Mulberry Trees for the culture of silk worms" to be planted on company land.[68] The S.U.M. appears never to have followed through on the plan, and in the first half of the nineteenth century, no significant domestic source of raw silk was available in the United States, putting the US silk manufacturing industry at a disadvantage. Within just a few months of commencing the manufactory, Colt's "1,000 spindles, 200 or 300 doubling spindles and 500 or 600 winding spindles" went silent as well.[69] Though Christopher Colt Jr. is generally not credited with being the father of the silk industry in Paterson, it was, in fact, the presence of Colt's silk machinery in the old Gun Mill which made it possible for John Ryle and his financial partner George Murray to initiate the Paterson silk revolution just a few months later (see chapter 5).

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65 Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.55.

66 Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 2.58.

67 Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.4.

68 Davis, *Essays, No. I–III,* 484.

69 Clayton and Nelson, as cited in Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.4.

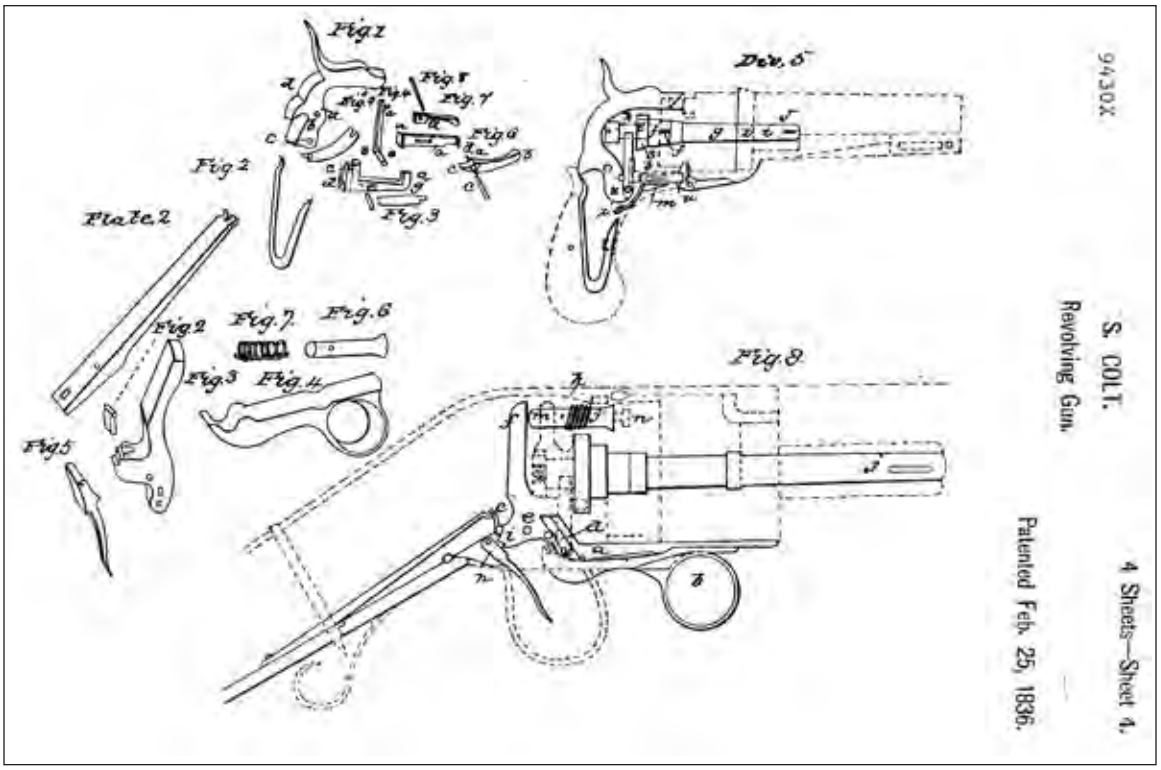

Figure 35: Samuel Colt patent drawing, #X9430 (US Patent and Trademark Office)

Figure 36: Paterson Museum display of Colt Paterson revolvers and rifles manufactured in the Paterson factory (photo by author, 2018)

Another innovative manufacturer occupied a substantial stone mill building constructed below the Upper Raceway by Roswell L. Colt, known as Passaic Mill. It was a purpose-built structure, leased in 1837 by Henry V. Butler, and designed for the manufacture of paper from hemp rope, knots, and cotton waste:

> This rough and apparently unpromising material was first used at the Passaic Mill and a peculiar picker or "devil" was used to tear in pieces and reduce to shreds the toughest knots with the same ease as other machinery shredded the plain rope.
>
> The process of boiling stock under pressure in rotary boilers, a method which has since been universally adopted throughout this country and in Europe, was also introduced by Mr. Butler. Even the coarse sacking in which the cotton-waste and rags are baled, together with pieces of old rope and the like, are picked, cleansed, boiled and manipulated until they leave the mill at last in the form of the finest whitest writing paper. Here the first super-calendered book paper ever manufactured was made.[70]

The company constructed the Ivanhoe Mill nearby in 1850 and shifted operations there entirely by 1857.

[70] "Ivanhoe Paper Manufacture Co., Excerpts from the Paterson Visitor Center's Historic Notes: The Ivanhoe Wheelhouse," *Paterson Friends of the Great Falls,* accessed 5/20/2019, http://patersongreatfalls.org/ivanhoe.html.

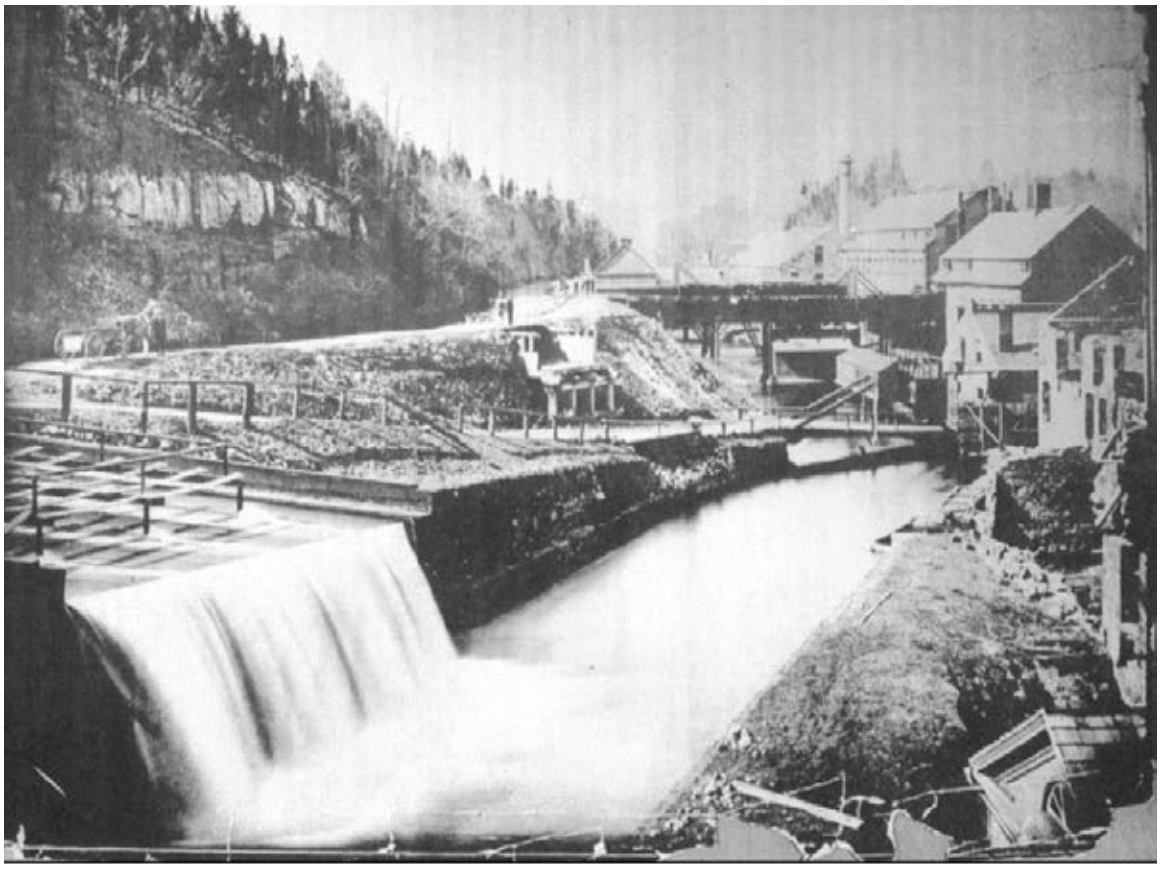

Figure 37: Upper Tail Race and southern spillway ca. 1860, showing the Rogers Locomotive Works flumes. (Passaic County Historical Society)

Connecting to the S.U.M. Raceways

Significant sections of the Rogers Locomotive Works still stand in Paterson today (2019), as does the remnant walls of the Colt Gun Factory, and the Ivanhoe Wheelhouse. All three provide a window on how Paterson factories used the S.U.M. waterpower. The 1887 Sanborn Insurance Map shows the Rogers Locomotive Works with two wooden flumes leading from the Upper Raceway to two overshot vertical wheels, while steam boilers provided backup power to the plant. The 1906 insurance drawing of the works (**Figure 33**) shows the flumes as enclosed structures. The Iron & Brass Ware Storage building and the two machine shops shown in the 1887 map are still standing today. The Ivanhoe Paper Manufactory, constructed in 1857, was located below the first (northern) spillway on the Upper Raceway. Drawing the first water from the Upper Raceway, the iron flumes led the water to two horizontal turbines by 1887, one located in the wheelhouse which is still extant today (2019). Ivanhoe also had backup power provided by steam boilers. The former Colt gun manufactory, shown as Benjamin Buckley's Sons Gun Mill on the 1887 Sanborn map, received the last water on the Middle Raceway. The nearby twenty-foot spillway was

controlled by a gatehouse and could be manipulated to increase or decrease the water available to the Gun Mill flume, shown in 1887 as a wide iron structure leading to what appears to be a horizontal turbine.[71]

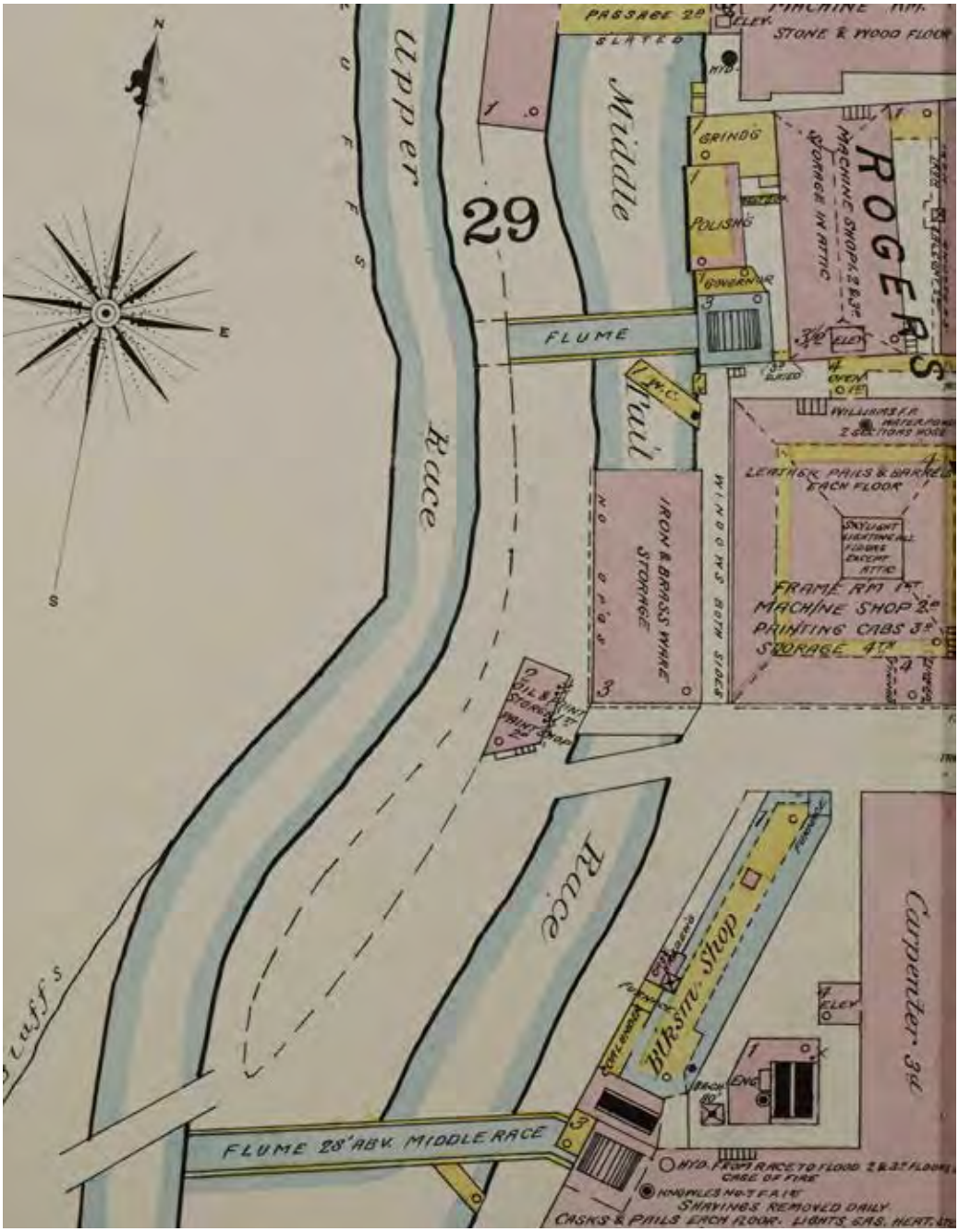

Figure 38: 1887 Sanborn Map showing detail of the Rogers Locomotive Works connection to the Upper Raceway.(Library of Congress)

[71] See Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 5.23–5.33 for a good discussion of waterwheel and turbine technology.

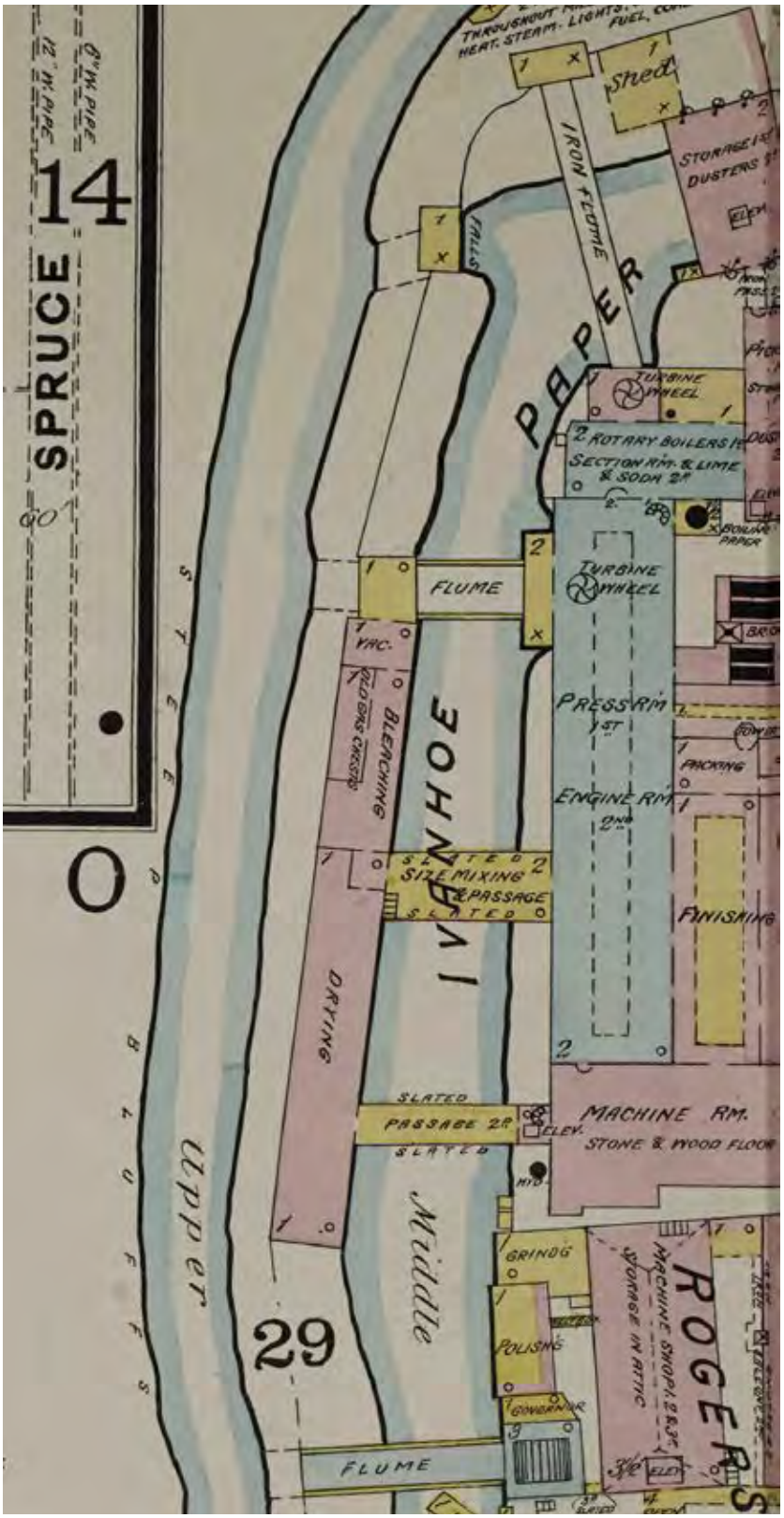

Figure 39: 1887 Sanborn map showing detail of the Ivanhoe Paper Co. connection to the Upper Raceway. (Library of Congress)

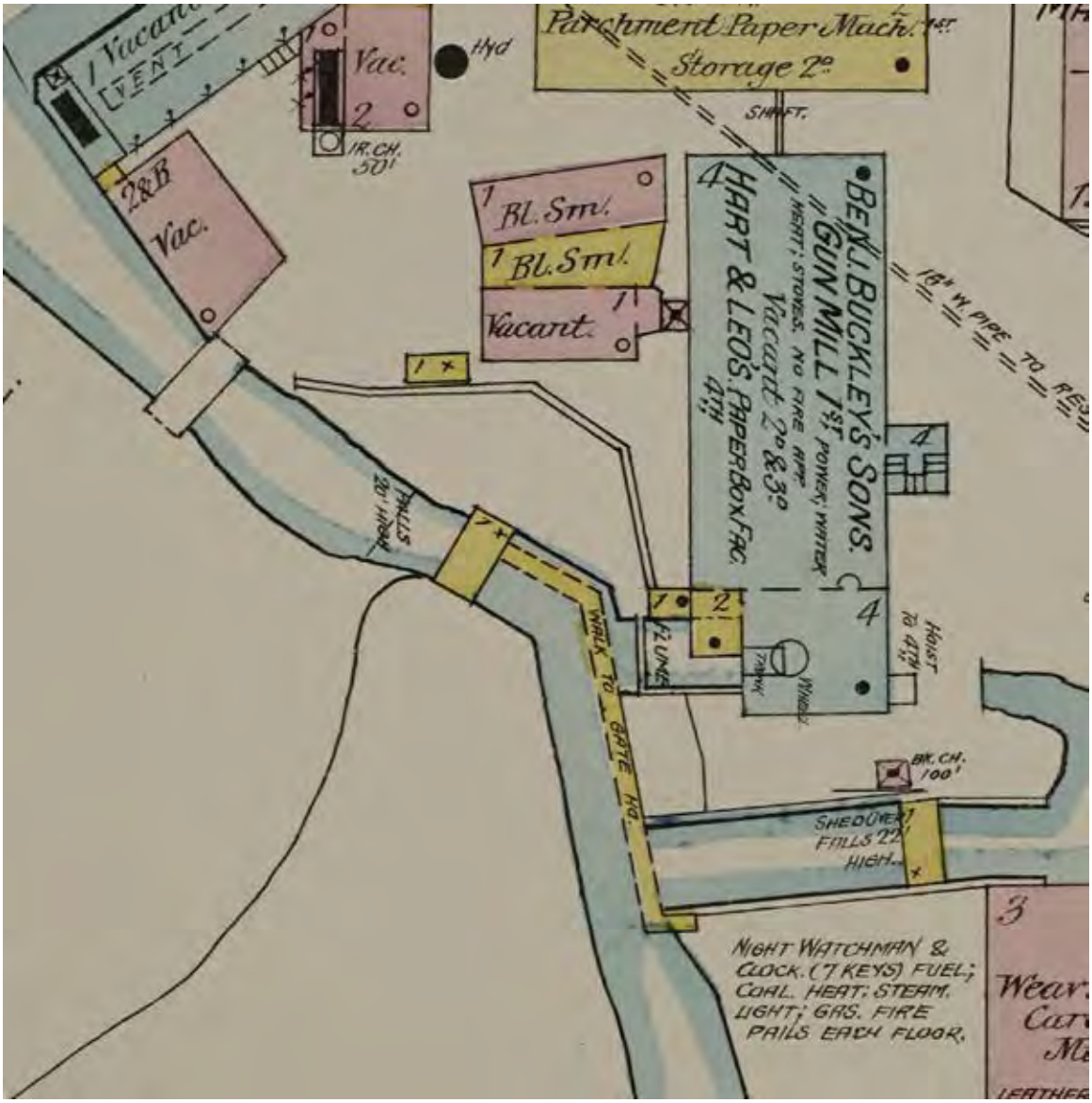

Figure 40: 1887 Sanborn map showing the former Colt Gun Mill connection to the Middle Raceway. (Library of Congress)

US Immigration and Paterson's Mid-Nineteenth-Century Population

Through the first half of the nineteenth century, Paterson's industrial community diversified to include a variety of manufactures. Textile production, particularly the various industries related to cotton, but also flax (linen) and wool, still dominated the mill seats. Silk was growing in importance as John Ryle's factory complex continued to expand. As

many as four locomotive factories operated in the city, while numerous machine shops continued their production. Paper, jute (rope), and buttons also factored into Paterson's expansion through the 1850s. The growth, setbacks, and failures of Paterson manufacturing were reflected in the city's human population, much of it fueled by European immigration. By the 1850s, the United States, both on its expanding frontier and in its burgeoning industrial cities, was becoming the immigrant destination envisioned by Hamilton and the early industrialists.

The United States is a nation of immigrants. From the first British, Dutch, Swedish, Spanish, and French ships which landed on the North American continent, the territories which later became the United States—and the native peoples which already occupied those territories—were slowly overtaken by the continuous in-flow of immigrants. Most came voluntarily, mostly European men and women seeking land and religious freedom. Some arrived as indentured servants bound to a term of service to repay their passage, or as convicts sentenced to serve their time in the colonies. Many were brought forcibly from Africa as enslaved workers for life.

The first US Population Census, taken in 1790, recorded nearly four million people, including approximately 700,000 enslaved men, women, and children. In New Jersey, the population topped 184,000 people, of whom 11,423 were enslaved.[72] The majority of the "free white" men, women, and children were American-born descendants of colonial immigrants as immigration stalled after the American Revolution.[73] Still, Thomas Jefferson believed the expanding US territorial frontier would attract new land-hungry European immigrants, while Alexander Hamilton believed American manufacturing would attract workers displaced by wars in Europe. Both were right.

By 1820, the US population had risen to more than nine million people, due in part to natural increase, but the census recorded more than fifty thousand "foreigners not naturalized." At that time more than two million Americans indicated they were "engaged in agriculture," while approximately 350,000 worked in manufactures. New Jersey's population of more than 277,000 included 7,555 enslaved men, women, and children. Nearly 16,000 people, approximately six percent of the total New Jersey population, were "engaged in manufactures."[74] The record showed similar percentages in New York, Connecticut, Massachusetts, and Rhode Island.

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[72] "1790 Census: Return of the Whole Number of Persons within the Several Districts of the United States" (Philadelphia: J. Phillips, George-Yard, Lombard-Street, 1793), *United States Census Bureau*, accessed 5/21/2019, www.census.gov/library/publications/1793/dec/number-of-persons.html.

[73] Approximately fifty percent of New Jersey residents in 1790 were of English descent, twenty percent were Irish, Welsh, or Scottish, twenty percent were Dutch, and the remaining ten percent Germanic and French. These are estimates based upon surnames most commonly associated with country of origin. (Thomas Purvis, "The European Ancestry of the United States Population, 1790: A Symposium," *The William and Mary Quarterly* 41, no. 1 (Jan., 1984): 85–101, Table II, www.jstor.org/stable/1919209)

[74] "Census for 1820" (Washington: Gales & Seaton, 1821), *United States Census Bureau*, accessed 5/21/2019, www.census.gov/library/publications/1821/dec/1820a.html.

Census year	Total population	Race					Hispanic origin (of any race)	White, not of Hispanic origin
		White	Black	American Indian, Eskimo, and Aleut	Asian and Pacific Islander	Other race		
NUMBER								
1990	248 709 873	199686070.0	29 986 060	1 959 234	7 273 662	9 804 847	22 354 059	188 128 296
Sample	248 709 873	199827064.0	29 930 524	2 015 143	7 226 986	9 710 156	21 900 089	188 424 773
1980	226 545 805	188371622.0	26 495 025	1 420 400	3 500 439	6 758 319	14 608 673	180 256 366
Sample	226 545 805	189035012.0	26 482 349	1 534 336	3 726 440	5 767 668	14 603 683	180 602 838
1970	203 211 926	177748975.0	22 580 289	792 730	1 369 412	720 520	(NA)	(NA)
15% sample [1]	203 210 158	178119221.0	22 539 362	760 572	1 356 967	434 036	9 589 216	169 023 068
5% sample	203 193 774	178081520.0	22 565 377	(NA)	(NA)	(NA)	9 072 602	169 615 394
1960 [2]	179 323 175	158831732.0	18 871 831	523 591	877 934	218 087	(NA)	(NA)
1960 [3]	178 464 236	158454956.0	18 860 117	508 675	565 443	75 045	(NA)	(NA)
1950	150 697 361	134942028.0	15 042 286	343 410	259 397	110 240	(NA)	(NA)
1940 [4]	131 669 275	118214870.0	12 865 518	333 969	254 918	(X)	*1 858 027*	*116 356 846*
5% sample [4]	(NA)	118392040.0	(NA)	(NA)	(NA)	(X)	*1 861 400*	*116 530 640*
1930	122 775 046	110286740.0	11 891 143	332 397	264 766	(X)	(NA)	(NA)
1920	105 710 620	94820915.0	10 463 131	244 437	182 137	(X)	(NA)	(NA)
1910	91 972 266	81731957.0	9 827 763	265 683	146 863	(X)	(NA)	(NA)
1900	75 994 575	66809196.0	8 833 994	237 196	114 189	(X)	(NA)	(NA)
1890 [5]	62 947 714	55101258.0	7 488 676	248 253	109 527	(X)	(NA)	(NA)
1890 [6]	62 622 250	54983890.0	7 470 040	58 806	109 514	(X)	(NA)	(NA)
1880	50 155 783	43402970.0	6 580 793	66 407	105 613	Black		
1870	38 558 371	33589377.0	4 880 009	25 731	63 254	Total	Free	Slave
1860	31 443 321	26922537.0	4 441 830	44 021	34 933	4 441 830	488 070	3 953 760
1850	23 191 876	19553068.0	3 638 808	(NA)	(NA)	3 638 808	434 495	3 204 313
1840	17 063 353	14189705.0	2 873 648	(NA)	(NA)	2 873 648	386 293	2 487 355
1830	12 860 702	10532060.0	2 328 642	(NA)	(NA)	2 328 642	319 599	2 009 043
1820	9 638 453	7866797.0	1 771 656	(NA)	(NA)	1 771 656	233 634	1 538 022
1810	7 239 881	5862073.0	1 377 808	(NA)	(NA)	1 377 808	186 446	1 191 362
1800	5 308 483	4306446.0	1 002 037	(NA)	(NA)	1 002 037	108 435	893 602
1790	3 929 214	3172006.0	757 208	(NA)	(NA)	757 208	59 527	697 681

Figure 41: US Population totals, 1790–1990 (US Census Bureau)

In July 1825, local Presbyterian minister Rev. Samuel Fisher recorded the population of Paterson. This remarkably detailed accounting of Paterson's people, shops, and factories provides a broad view of an American manufacturing town in the 1820s. Fisher recorded a total of 584 dwellings, churches, schools, stores, and "mechanics shops," of which 486 were occupied dwelling houses, seventy-five were commercial buildings, and twenty-three were unoccupied buildings.

The population in 1825 topped 7,500 whites (including children) and 165 "colored persons"—a significant increase from the 1,500 people recorded in 1814. Eleven different church denominations were represented among the 849 households, though dominated by churches generally associated with English and Irish heritage—Presbyterian (297 families), Methodist (114), Roman Catholic (113), and Episcopal (57). The second-largest denomination was Reformed Dutch with 201 families, and there were smaller denominations, including a Baptist church with forty-seven families, while Lutherans, Quakers, and Universalists claimed just two families each.[75]

[75] "A Statistical View of the Manufacturing Establishments, Machine Shops, &c in Paterson NJ," 1825, "Census of Paterson, NJ," Paterson Museum, Paterson, NJ. The two other denominations were Reformed Presbyterian and Christian Baptist. Fisher also identified two "Deists." In 1829, a new Catholic church was under construction, suggesting a significant Irish population.

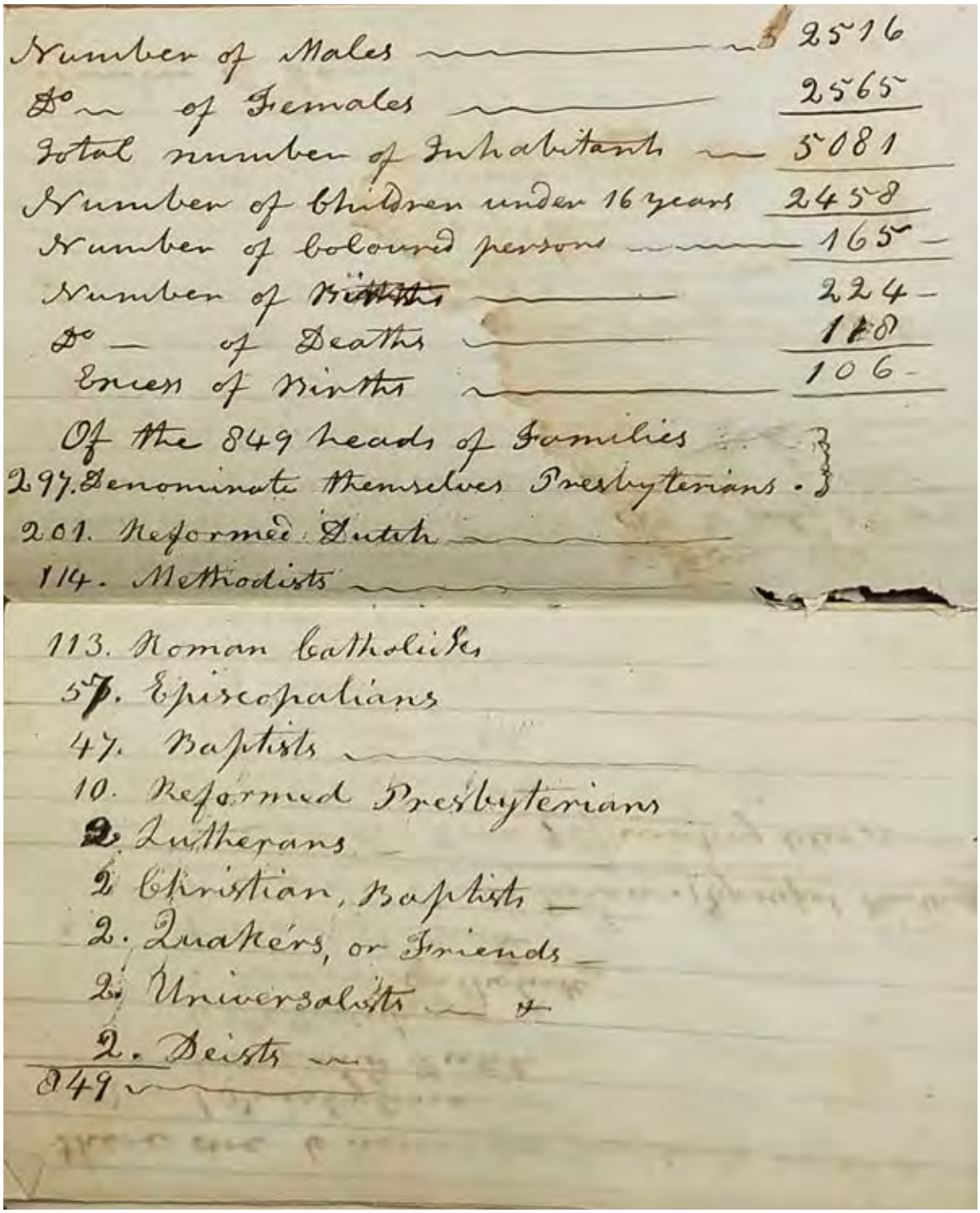

Figure 42: Page from 1825 Fisher "Statistical Account" (Paterson Museum)

In 1825, the various Paterson factories and machine shops employed 1,154 men, women, and children. Additionally, Fisher noted that 260 hand looms were in operation, "exclusive of those in the Factories." There were also numerous smaller artisan shops—hat makers, shoemakers, blacksmiths, wheelwrights, watchmakers, a brush factory, a soap

factory, a carpet weaver, a saddle & harness maker, tailors, and milliners. Retail shops included ten "fancy dry goods stores," eight hardware stores, twenty-three grocery stores, and "32 called groceries, in which little else but Ardent spirits is sold," breweries, confectionaries, and seven "Licensed taverns." Six schools for boys and four schools for girls provided education for 413 children, likely mostly children from the families of factory owners and upper management.

There was a class hierarchy already in place in Paterson by the late 1820s, cemented in the late 1830s by the construction of Roswell L. Colt's opulent Roswell House. Built on the hill in the center of town once eyed by L'Enfant for a grand public building, Colt's mansion stood within view of both the prosperous manufactories and the workers' humble dwellings. A traveler passing through Paterson in 1832 observed that the factories were beautified "with gardens so tastefully laid out, and the banks of the river kept so neat, and ornamented with weeping willows."[76] Below the factories and Roswell House was the lower town, home to the workers and described by the traveler as "tenements and little houses… [on] narrow, unpaved streets filled with pigs and dirty children, with émigré English factory hands, and with the wage-earning daughters and sons of American yeomen."[77] Paterson by 1830 was on a course to become the kind of "factory town" which spawned the labor movements of later years. However, in 1827, the year Sam Patch first jumped the Great Falls of the Passaic, the city still retained some of its association with the artisan mechanics which made American manufacturing possible.[78]

For Paul E. Johnson, in his book *Sam Patch, the Famous Jumper,* Sam Patch the "mule spinner" epitomized that approaching change.[79] Patch grew up in Pawtucket, Rhode Island, and starting work in Samuel Slater's "White Mill" at the age of seven.[80] By the time he arrived in Paterson, he was a "boss mule spinner" and became a member of the Paterson Spinners Association. He worked at the Hamilton Mills supervising the children who operated the spinning machines, just as he had done as a child. According to Johnson, many of the other men Patch worked with in Paterson "were veterans of the labor violence and repressed reform movements of industrial Lancashire," often called "Manchester *mobites*" by the local newspapers. On July 28, 1828, Patch and the other boss spinners and weavers led a walkout from at least twenty of the Paterson factories protesting a change in

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[76] As cited in Paul E. Johnson, *Sam Patch, the Famous Jumper* (New York: Hill and Wang, 2003), 60.

[77] Johnson, *Sam Patch*, 60.

[78] Johnson described Sam Patch as "a factory hand who, in the 1820s, became America's first professional daredevil. Patch jumped from high places beside waterfalls." (Johnson, *Sam Patch*, ix) Patch's first jump took place at the Great Falls of the Passaic on September 30, 1827.

[79] The "spinning mule" was a thread spinning machine invented in 1779, which allowed the skilled operator (mule spinner) and his assistants to work as many as 1,000 spindles at a time. ("Spinning Mule," *Encyclopaedia Britannica*, accessed 1/24/2020, https://www.britannica.com/technology/spinning-mule)

[80] Johnson, *Sam Patch*, 30.

the lunch hour as well as the standard twelve-hour work day. The walkout failed, but was emblematic of the growing divide between workers and factory owners.[81]

Paterson's population grew to as high as 13,000 in 1832, but suffered losses with a cholera outbreak that year.[82] Several financial panics in 1835 and 1837 forced many factories to close, leaving workers unemployed and forced to move elsewhere. By 1840, the US Population Census recorded just under 7,600 souls, including 182 free blacks and eight enslaved. By 1850, Paterson had recovered, numbering more than 11,000 residents.

[81] Johnson, *Sam Patch*, 66–71.

[82] "Census of Paterson, NJ," Paterson Museum, Paterson, NJ.

Figure 43: 1835 map of Paterson (Library of Congress)

Conclusion

The success of the S.U.M. and the Paterson manufactories through the first half of the nineteenth century was made possible by the infrastructure developed by the S.U.M. in the 1790s. Rising from what appeared to be a failure, the S.U.M. returned to corporate and manufacturing prominence, according to economist Joseph Stancliffe Davis:

> for those who were able and willing to wait the Society's stock became a highly profitable investment and the corporation proved itself no insignificant factor in promoting the development of a "considerable manufacturing town." The event has thoroughly justified the farsightedness, if not the sense for immediate profit, which was shown by the original entrepreneurs.[83]

Though many of Paterson's mill owners had worked their way up from positions as skilled laborers, the profits realized by the mill owners and investors starkly contrasted with the poverty of Paterson's mill laborers. The deepening chasm between labor and wealth realized the fears of men like Thomas Jefferson, who dreaded this dark side of the Industrial Revolution.

For Paul E. Johnson, Sam Patch's first jump into the Great Falls chasm was a perfect metaphor of that growing divide. Patch staged his very public jump in 1827 in defiance of Timothy Crane's very private Forest Garden development above the Great Falls, according to Johnson's interpretation. The jump took place at the same moment that Crane was installing a covered toll bridge across the Falls, a bridge intended to control access to the Forest Garden property. Crane's Forest Garden occupied land once enjoyed by all of Paterson's citizens:

> From Godwin's tavern, pathways led through the forest toward the falls.... Pleasure seekers drank at Godwin's tavern, hiked through the woods, threw stones into the chasm and dropped them into the crevasses, carved their names on trees and rocks, fished at the base of the falls, or found quiet places to sit and enjoy the summer air.... The working people of Paterson valued the falls ground: it was a wild and beautiful spot that belonged to everyone and no one... [84]

Johnson observed that Patch and his fellow factory laborers viewed Crane's control over access to the land as another door closed by those who sought to keep them down, and for that, perhaps, Sam jumped.[85]

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[83] Davis, *Essays, No. I–III,* 518.

[84] Johnson, *Sam Patch,* 48.

[85] Johnson's interpretation of Sam Patch's first jump is not shared by all historians. Sam Patch may have simply been taking advantage of the large audience gathered to watch the bridge installation. Indeed, Patch did not become a labor organizer. Instead, after several successful jumps at the Great Falls, Patch left Paterson to pursue a career as a show jumper.

CHAPTER 5

Silk City

> It seems strange that silk, of all filamentary substances that which gives the finest, most durable and most elastic thread, with a tenacity equal to that of good iron, should be the product of an unsightly worm: but so it is.
>
> Levi R. Trumbull
> *History of Industrial Paterson,* 1882

Introduction

Sam Patch and John Ryle both worked in the textile industry as children, Patch spinning cotton in Pawtucket, Rhode Island, and Ryle in his brothers' silk mill in Macclesfield, England. However, the two men could not have been more different in their life journeys. Sam Patch ditched millwork in favor of notoriety as a falls jumper and died in 1829, jumping the falls at Rochester, New York. John Ryle, on the other hand, gained notoriety as he parlayed his experience into an empire of American silk production:

> embarking alone in an untried and uninviting line of manufacture in America, he became one of the pillars of the silk trade of the United States, and his name a household word among the laborers in that industry.[1]

At its height, nearly one-half of US silk production came out of Paterson mills.[2] It was a manufacturing revolution initiated by John Ryle.

Over the decades after the American Civil War, silk fueled Paterson's expansion and came to define the city's identity as "Silk City." As many of the cotton mills along the S.U.M. raceways shifted to silk production, the development of steam-powered turbines allowed new mills to locate on sites independent of the company's system. The S.U.M. reclaimed its position as the Paterson powerbroker with the opening of the hydroelectric plant in 1914. The steady growth of Paterson's mills and factories through the turn of the twentieth century, like other American manufacturing cities, drove a surge of immigration

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[1] Clayton and Nelson, *History of Bergen and Passaic,* 467.

[2] Iolavera et al., *Great Falls Historic District, Special Resource Study,* 32; "It Happened Here, New Jersey: Paterson Silk Strike," *New Jersey Historical Commission,* accessed 5/28/2019, www.nj.gov/state/historical/it-happened-here/ihhnj-er-paterson.pdf.

from Europe unlike anything seen before in the United States. At the same time, deteriorating working conditions created an atmosphere ripe for labor unrest. Paterson's silk mills stood at the center of some of the earliest organized labor actions, and in 1913, the infamous "Paterson Silk Strike."

The "Silk City" period of Paterson and S.U.M. history exemplifies American industrial textile development from the end of the American Civil War to the beginning of World War I.

A Brief History of Silk Production in the United States

Silk production through the American colonial period was limited largely to the planting of white mulberry trees *(morus alba)* on which the *Bombys* larvae (silk worm) fed to produce their silk-fiber cocoons. This plan fit into the established role of the American colonies as a source of raw materials for British production and trade. Unlike France and Italy, where silk was both cultivated and woven, the climate in England prevented silk cultivation. English silk manufacturers had to purchase raw silk on the open market, putting them at a distinct financial disadvantage.[3]

Several of the English colonies in North America thus viewed silk cultivation as a potentially lucrative trade item. The colony of Georgia actively encouraged raw silk production beginning in 1732, exporting as much as 10,000 pounds to England in 1750, but ceased in the 1770s with the introduction of cotton.[4] South Carolina produced smaller amounts of silk beginning in the 1730s, but also shifted to cotton by the 1770s. Silk culture began on Long Island in the 1750s, shifting to the Connecticut colony in the 1760s when the colonial government began offering incentives for silk production there. The Connecticut legislature reportedly offered "ten shillings bounty or premium for every hundred trees which should be planted and preserved in a thrifty condition for three years, and three pence per ounce for all raw silk which the owners, of trees should produce from cocoons of their own raising within the State."[5] In New Jersey, "large mulberry groves flourished at Princeton and elsewhere" in the 1770s; however, as elsewhere, their numbers declined during the American Revolution.[6]

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[3] Linus Pierpont Brockett, *The Silk Industry in America* (Silk Association of America, 1876): 24–25, accessed 5/28/2019, https://books.google.com/books/about/The_Silk_Industry_in_America.html?id=kCA-AAAAYAAJ. See also Jacqueline Field, Marjorie Senechal, Madelyn Shaw, *American Silk, 1830–1930: Entrepreneurs and Artifacts* (Lubbock: Texas Tech University Press, 2007), for a more contemporary review of the American silk industry.

[4] Trumbull, History of Industrial Paterson, 162; see also Brockett, *The Silk Industry in America,* 28–29.

[5] Brockett, The Silk Industry in America, 30; see also, Trumbull, *History of Industrial Paterson,* 164.

[6] Trumbull, *History of Industrial Paterson,* 162.

A revival of silk cultivation began after the Revolution, largely focused in Pennsylvania and Connecticut. In the 1790s, Philadelphia financier Robert Morris planted a large mulberry orchard on his Bucks County estate, near the falls of the Delaware River (Morrisville).[7] New York, Delaware, Maryland, Virginia, and New Jersey all saw renewed interest, and though the S.U.M. considered mulberry cultivation in 1794, they apparently took no action.[8]

Connecticut was the primary locus of silk cultivation and production into the early nineteenth century, where several new factories tested the viability of silk manufacture in the United States. The first water-powered silk mill reportedly opened in 1810 in the town of Mansfield, Connecticut, though crude machinery doomed the tiny mill to failure. In 1828, Edmund Golding emigrated from the English silk mill town of Macclesfield (where young John Ryle lived and worked) to Mansfield where he helped to establish the Mansfield Silk Company in 1829.[9] The Connecticut Silk Manufacturing Company was established in Hartford by Jonathon Cobb and Christopher Colt (Sr.), and in 1838, the Cheney brothers started a mill in Manchester.[10]

John Ryle arrived in Northampton, Massachusetts, in April 1839, where he was employed as a weaver in Samuel Whitmarsh's "New York and Northampton Silk Company."[11] Unfortunately for Golding, Colt, and Ryle, that same year "*Morus Multicaulis* Mania," an odd episode of speculation on sales of the *morus multicaulis* mulberry tree variety, reached its breaking point, ruining many silk growers and producers in the process, including the Whitmarsh, Mansfield, and Hartford (Colt) silk mills. Then in 1844, a mulberry blight destroyed much of the remaining orchards, seriously curtailing domestic raw silk production.[12]

Manufacture of silk products in Philadelphia began in 1770 when the Society for the Cultivation of Silk established a filature, processing silk produced on New Jersey farms, among others. German immigrant William Horstmann, who opened a silk weaving shop in Philadelphia after his arrival in 1815, was reportedly "the first American textile manufacturer to use the Jacquard loom" in 1824, and in 1831 he built a silk-weaving factory. Philadelphia's "Silk District" survived the mulberry disasters of 1839 and 1844. It grew in

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7 Jack McCarthy, "Silk and Silk Makers," *The Encyclopedia of Greater Philadelphia*, accessed 5/24/2019, https://philadelphiaencyclopedia.org/archive/silk-and-silk-makers.

8 Brockett, *The Silk Industry in America*, 35; Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls*, 3.1.

9 David Landry, "History of Silk Production," *Mansfield Historical Society*, accessed 5/24/2019, www.mansfieldct-history.org/history-of-silk-production.

10 Brockett, *The Silk Industry in America*, 43; "The Cheney Brothers' Rise in the Silk Industry," *ConnecticutHistory.org*, accessed 5/29/2019, https://connecticuthistory.org/the-cheney-brothers-rise-in-the-silk-industry.

11 Trumbull, *History of Industrial Paterson*, 165.

12 Brockett, *The Silk Industry in America*, 40; Landry, "History of Silk Production." The Cheney's Mt. Nebo Silk Mills survived the crash ("The Cheney Brothers' Rise in the Silk Industry").

importance through the second half of the nineteenth century, providing nearly one-third of silk products made in the United States.[13] There were other silk manufactures established in New York and Massachusetts as well, but none ever equaled the output of the Paterson silk mills, which supplied nearly one-half of US silk production.[14]

The Silk Manufacturing Process

The highly labor-intensive process of reeling raw silk proved uneconomical in the US labor market. Thus, by the time John Ryle established his silk manufactory in Paterson in 1840 most raw silk was imported from China, though higher grades were gotten from Italy as well.[15] Once the raw silk was in hand, however, it had to go through a number of processes before reaching the weaver's loom. According to Linus Brockett, writing in 1876, the initial phase of preparation, "winding, cleaning, doubling, twisting, rewinding and reeling the silk, together constitute what is called throwing (from the Saxon *thrawan,* to twist)," and the "manipulator who passes it through these various processes is called a throwster… "[16]

The first cleaning of the raw silk prepares it for twisting the threads. Skeins are first soaked for several hours in 110-degree water to soften the gum, which originally held the cocoon together:

> When taken out of the water, these bags are put in an open cylinder, porous on the sides, and set in a machine which is operated by steam power, and causes the cylinder to revolve with great velocity. In five or ten minutes the water is pressed out and the gum sufficiently softened to permit of easy winding. It is then wound first on a spool about 3 inches in length. If it is Chinese silk, it is cleaned by being passed through the cleaning machine; each thread usually, but not always, passing between two sharp-edged metal plates, which remove any unevenness, leaving the filament smooth, clean and even. The Italian silk does not usually require this cleaning.[17]

The prepared silk then moved to the twisting process:

> The silk on the second spool is next passed to a doubling machine, where, if it is intended for tram or organzine, two or more threads are joined together, and

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[13] McCarthy, "Silk and Silk Makers." See also Trumbull, *History of Industrial Paterson,* 162.

[14] Brockett, *The Silk Industry in America,* 54.

[15] Brockett, *The Silk Industry in America,* 90.

[16] Brockett, *The Silk Industry in America,* 91. See also Mary Schneck Woolman and Ellen Beers McGowan, *Textiles: A Handbook for the Student and the Consumer* (New York, The Macmillan Company, 1920), 216–226, https://catalog.hathitrust.org/Record/001526140.

[17] Brockett, *The Silk Industry in America,* 90.

> drawn upon a third spool. If it is intended for sewing-silk or twist, four, five, six or more are doubled together. The silk in this state is put in the spinning machine, and spun a certain number of turns per inch, the twisting being looser for tram or filling [woof or weft] than for warp or organzine. For the latter, two of these threads are doubled and spun upon a fourth spool, the twist being reversed to make the thread stronger. For filling or tram, two threads or more are twisted together somewhat less closely than in organzine.[18]

The twists (thread or yarn) were then wound onto skeins in preparation for dyeing.

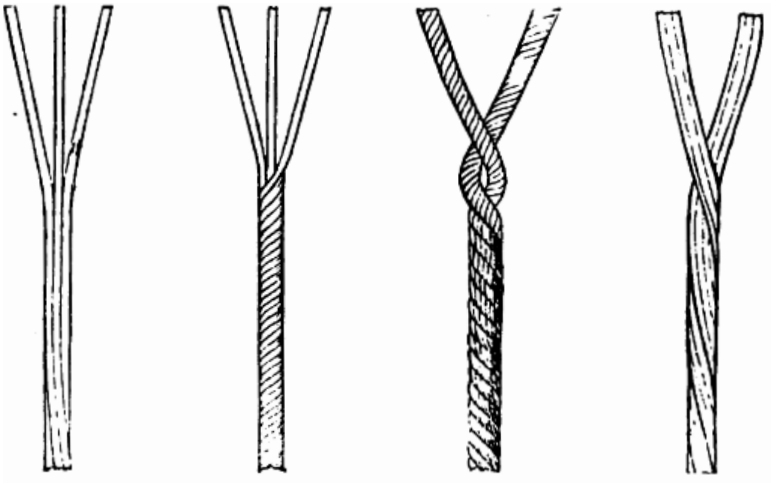

Figure 44: Organzine and Tram (Woolman and McGowan, ***Textiles,*** p. 220)

A fresh water source was necessary to prepare the silk yarn for dyeing. The process to remove the gum still present from the raw silk required boiling the yarn "in soap and water, to free it from any remaining gum, and to give it a more lustrous appearance."[19] This process typically reduced the weight of the yarn by up to twenty-four percent. After the cleaned yarn was dried, it was then placed in dye-vats for coloring. Silk dyeing through much of the nineteenth century, according to Paterson historian Levi Trumbull, was typically done "in the yarn" rather than "in the piece." By 1882, at the time of Trumbull's publication, newly developed "aniline dyes" made possible "every tint, shade and color desired, except black," black being still an experimental color.[20] The dyed silk was then spooled in preparation for sale as sewing thread or for the loom as woof (also weft or tram; the lengthwise threads) and warp (or organzine, the horizontal threads).

The final process in silk manufacturing was the weaving of various fabrics. Initially, American silk production was limited to preparing sewing thread or twists, cords,

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[18] Trumbull, *History of Industrial Paterson,* 152.

[19] Brockett, *The Silk Industry in America,* 92.

[20] Trumbull, *History of Industrial Paterson,* 155.

trimmings, and weaving ribbon and handkerchiefs, owing to the poor quality of silk available.[21] Much of the early weaving was done on hand looms in private homes, though the Northhampton factory John Ryle worked in had two power looms on which watch ribbon was woven.[22] Access to higher quality silk improved the potential for production of "silk broadcloths" and the need for more efficient power looms. Brockett described the "problems originally to be solved in the invention of power-looms":

> to make the processes of the old hand-loom automatic, exact and rapid; to obtain tenseness in the warp; to effect its gradual unrolling and the rolling up of the woven goods; to drive the shuttle back and forth at the proper time; to beat up the tissue properly; to effect the stopping of the machinery for the substitution of a new filled bobbin when the one in the shuttle was exhausted; to accomplish ten or more times the work of the weaver within a given period.[23]

Writing in the early 1880s, Levi Trumbull described the improvements brought to silk weaving by the power loom:

> The many improvements recently made permit the weaving of satins and velvets and of most goods of regular figure on the power-loom.… a comparatively recent invention known as the Earnshaw Needle Loom, improved by J. H. Greenleaf, performs very well what is required. By an ingenious stop motion invented by the latter the loom stops instantly on the breaking of a single thread. These looms are calculated for much greater speed than the ordinary power-loom.
>
> … Anything like an adequate and intelligible description of the Jacquard attachment is a hopeless task. The most prominent features are: first, a box containing 100 or more wires or needles pointing outward; and second, a hollow, prism-shaped revolving cylinder around and on which passes a chain of cards attached to each other like a "Jacob's ladder." If the pattern be complicated the number of cards is greater. The revolving cylinder presents a new card to the points of the wires at every quarter of a revolution, the holes in the cards being so arranged as to raise in succession those threads which will make out the intended pattern, and it is necessary that there be as many cards as there are threads of weft in the pattern.[24]

The sound of the pounding silk power looms would soon become as ubiquitous to the Paterson landscape as the old cotton looms of earlier decades.

By the time of Trumbull's writing of the *History of Industrial Paterson,* published in 1882, the Paterson silk industry was reaching its height, encompassing essentially all the

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[21] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.4.

[22] Trumbull, *History of Industrial Paterson,* 165.

[23] Brockett, *The Silk Industry in America,* 99.

[24] Trumbull, *History of Industrial Paterson,* 154–157.

processes of silk manufactures. From Christopher Colt's relatively antiquated 1839 throwing operation in the top floor of his brother's Gun Mill, Paterson grew by 1882 to include seventy-seven silk manufacturers, both large and small, along with seven dye works, and five finishing houses.[25] Though Colt was the first to attempt silk manufacture in Paterson, it was John Ryle who established the first successful silk manufactory and helped to transform Paterson into Silk City.

John Ryle and Silk in Paterson[26]

John Ryle, who emigrated from Macclesfield, England, in 1838 at the age of twenty-two, first made acquaintance with George W. Murray in Northhampton, Massachusetts. Murray was a partner with Mr. Whitmarsh in the Northhampton silk mill where Ryle worked as a silk weaver. As fate would have it, when Ryle left the mill to move to New York City and manage the importation of his brothers' silks from England, a chance meeting with Murray on the street in 1839 would change the future course of Paterson industry. Murray asked Ryle to appraise Christopher Colt's silk machinery, still located in Paterson in the former Colt Gun Mill. After purchasing the equipment in 1840, George Murray hired John Ryle to superintend his new silk manufactory located on the fourth floor of the old stone mill. In 1843, Ryle became a partner in the business and in 1846, purchased Murray's share. Ryle soon expanded the mill with the addition of a fifth floor with skylights and began weaving silk broadcloth, "a first for Paterson," and is said to have woven the twenty-foot by forty-foot flag flown at the Crystal Palace during the 1852 New York World's Fair. Though this first experiment with weaving broad silks soon failed because of competition from foreign imports, Ryle continued to take steps to improve his business. In 1852, he gained full control of the Gun Mill lot after purchasing the Colt family interest in the leasehold.[27]

With full control of the mill lot and building, John Ryle began to expand his capacity, occupying the first floor of the mill (in addition to the third, fourth, and fifth floors) while the H. M. Low & Company cotton spinning shop moved to the second floor. In the open space on the lot, Ryle constructed several new buildings, including a two-story silk mill in 1850, a row of secondary buildings along the riverbank constructed of stone, and a dye house "against the eastern side of the mouth of the North Gates Waste Way."[28] Thus,

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[25] Trumbull, *History of Industrial Paterson,* 198–255 ("Silk Industry—Individual Sketches").

[26] Much of this section is quoted from the very thorough documentation of John Ryle in Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* chapter 3.

[27] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.6; citing Passaic County Deed L/36 and Abstract of the Title of Society of Useful Manufactures as to Gun Mill Lot, n.d.

[28] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.6.

John Ryle became the first silk manufacturer to incorporate much of the range of processes necessary to produce American silk economically.

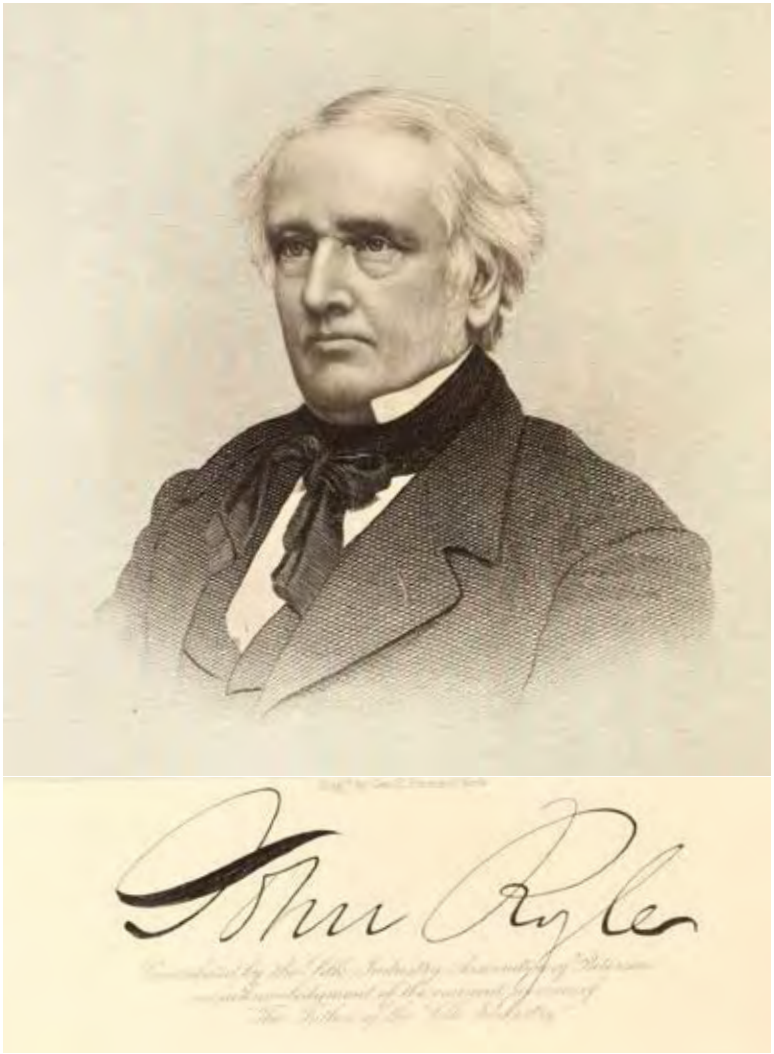

Figure 45: John Ryle portrait (in Trumbull***, A History***, 171)

Through the 1850s, Ryle remained the primary silk producer in Paterson, building his second mill, the Murray Mill, in 1854.[29] His operation served as "an incubator for the industry," training employees who later became factory owners in their own right, including Robert Hamil, James Booth, James Walthall, J. Jackson Scott, and James Thorp.[30] Ryle leased his dye works to a succession of men who developed their trade skills under Ryle's

[29] Trumbull, *History of Industrial Paterson,* 180.

[30] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.22. It is noted that "a handful of other attempts at silk manufacture were made in Paterson in the 1840s," however, "in the early 1850s John C. Benson opened his own silk factory with 1,600 spindles and a dye house… ." (Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.12).

watch, beginning with James Mayers and William C. Brown. Others included Pierre Thonnerieux, John Heidenreich, Albert King, and Claude Greppo, all skilled in the art of silk dyeing.[31] All these men illustrate the opportunity for advancement in Paterson—from skilled labor to shop owner—made possible by the relatively low start-up costs provided by with the S.U.M. mill seat and waterpower leases.

Perhaps Ryle's most important employee was Charles Mosley, a machinist whose improvements helped his operations run more efficiently. Levi Trumbull called Charles Mosley "the pioneer in this department, and on him the success of the silk manufacture largely depended." Trumbull described one of the improvements contributed by Mosley, "the guider or traverse motion, used on winders or spinners to guide the threads in filling the bobbins, so that they were filled evenly, and not in the sloppy manner before in vogue."[32] This would prove a significant advantage as power loom speeds increased.

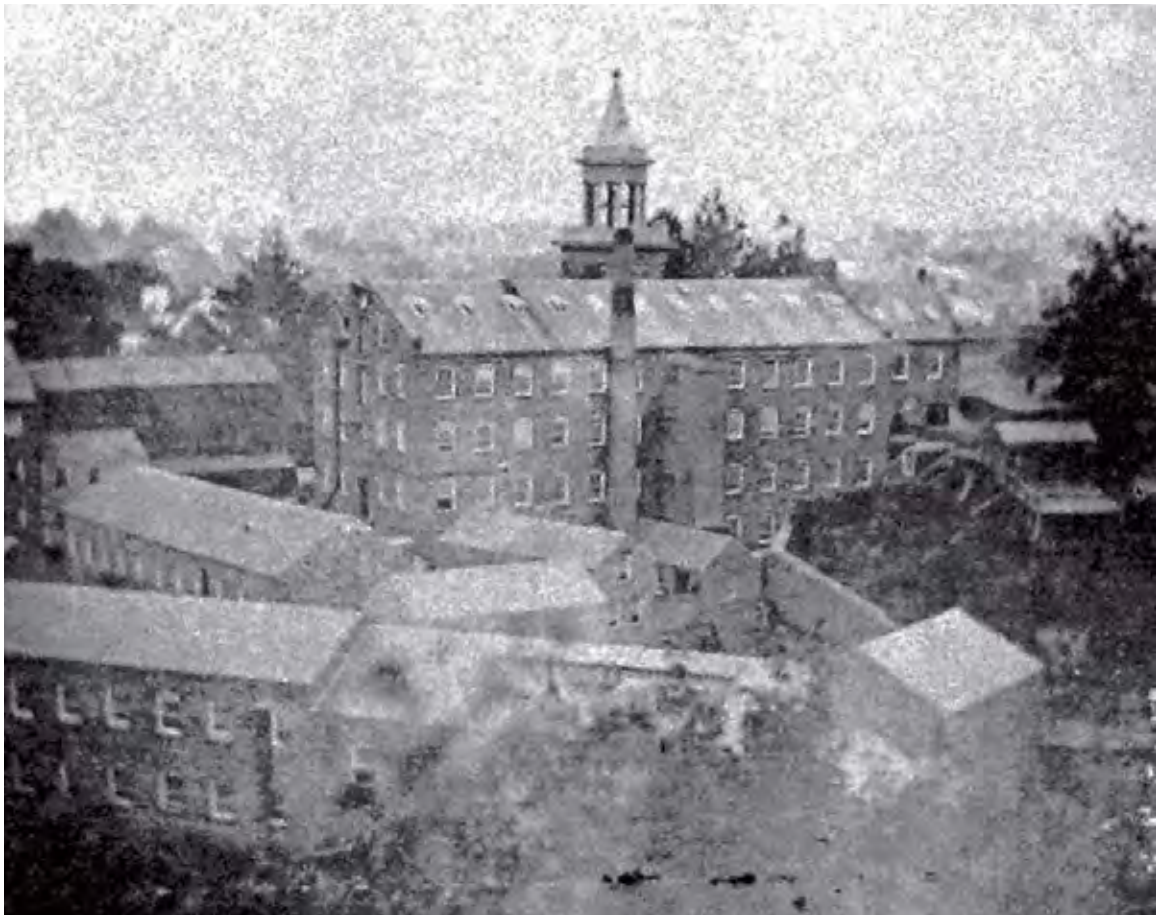

Figure 46: Ryle Silk Mill and Dye Works ca. 1855 (Paterson Historic Preservation Commission)

[31] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.22.

[32] Trumbull, *History of Industrial Paterson,* 174.

Figure 47: 1854 wall map, "Paterson Mills" (Paterson Museum)

The industrial landscape of Paterson did not actively shift to silk production until after the American Civil War. Still, by the 1850s John Ryle's influence on Paterson transcended his role as manufacturer. At the completion of his construction of the Murray Mill, its sixteen to eighteen foot ceilings said to be "light, lofty and spacious… vastly different from the low-ceilinged, cramped and ill-ventilated mills to be found in Paterson at that period," Ryle invited his 500+ employees to celebrate with a dinner and grand ball in the as-yet vacant mill:

> At the grand glorification attending the formal opening of this mill the entire operative force employed by Mr. Ryle, more than 500 in number, sat down to dinner on the top floor, where ample preparations had been made, the great coppers having been brought from the dye house to cook in, and the grand piano from Mr. Ryle's residence to furnish the music for the occasion. It is described as one of the greatest days ever known in Paterson up to that time, and the rejoicing was general.[33]

John Ryle's reputation as a "public benefactor" was well earned, according to Paterson historian William Nelson, who surely knew Ryle personally. Nelson described Ryle as "possessed of the most liberal and enterprising spirit, a genial nature, and is hospitable and kind to all," with "strict integrity" and a "high sense of honor."[34]

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[33] Trumbull, *History of Industrial Paterson,* 180.

[34] Clayton and Nelson, *History of Bergen and Passaic,* 467.

John Ryle is remembered particularly for two projects which benefited the citizens of Paterson, both linked to the former Forest Garden property above the Great Falls. Sometime about 1852, Ryle purchased the property and "adorned the grounds around the 'Cottage on the Cliff' at his own expense, and threw them open to the public, receiving the grateful recognition of the working population of the city for the bestowment of so great a boon upon them."[35] Ryle used another part of the property to construct a reservoir to supply fresh water to his operations at the Gun Mill, but also included pathways for public use which wound around the picturesque "lake." This "Lower Reservoir," as it became known, was actually an enlargement of a small lake fed by a spring and developed by Peter Archdeacon, previous owner of the Cottage on the Cliff property after Timothy Crane.[36]

Figure 48: **Sketch of Great Falls and Cottage on the Cliff, 1880 (Trumbull, *A History.*)**

The upgraded five million-gallon reservoir played an important role in another Ryle public project. In February 1854, Ryle became the primary investor in the Passaic Water Company. When the corporation advertised for subscribers, apparently few investors took an interest:

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[35] Clayton and Nelson, *History of Bergen and Passaic,* 467; Clarke et al., *Vista Park Master Plan,* 22.

[36] Clarke et al., *Vista Park Master Plan,* 22.

> the full amount of the subscription to the capital stock was only completed by Mr. John Ryle, who had already subscribed for the largest part, filling up the amount needed by subscribing for the balance. This was done at the last hour of the day before closing the books.[37]

Other investors included Ryle's nephew, William Ryle, Jr., and Peter Ryle (possibly his brother), as well as Roswell L. Colt, Thomas D. Hoxsey, John J. Brown, Andrew Derrom, Thomas Thorp, and C. S. Van Wagoner. The water project hinged on Ryle's reservoir, the use of which he offered to the water company in exchange for payment of an annual rental fee.[38]

Figure 49: 1871 Map of Paterson, detail showing the water works site (Library of Congress)

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[37] Nelson and Shriner, *History of Paterson, Vol. II*, 407.

[38] Nelson and Shriner, *History of Paterson, Vol. II*, 407.

Figure 50: Vista Park Master Plan (page 25), showing a series of historic images of Monument Heights. (City of Paterson)

By 1856, steam-powered pumps forced water from the river through an eighteen-inch pipe up the cliff to the Lower Reservoir overnight and returned by gravity during the day through the city distribution system of pipes. The Passaic Water Company added a pumping station above the Great Falls in 1862 and added a second reservoir, known as the Middle Reservoir, to improve efficiency and add capacity for the growing city. Though the water project was expanding, it blended with the public park on the cliffs above the Falls, including public walkways around the new reservoir and leading to an "observatory" or viewing platform, and a staircase leading down the cliff to the river. The 1868 Soldiers and Sailors Monument, a sixty-three-foot memorial to the Civil War fallen of Passaic County, was the genesis of the name "Monument Heights," by which the area became known.[39] Both the water and park projects were born of a desire to improve life among Paterson's working class and enhanced John Ryle's status as a man of the people.

Though faced with repeated adversities—bankruptcy in 1857, fire destruction of the Murray Mill in 1869, and another bankruptcy in 1872—John Ryle apparently never gave up and continued to help others establish their own businesses in Paterson. In 1869,

[39] Clarke et al., *Vista Park Master Plan,* 22–24.

the people of Paterson elected Ryle as mayor, a post he held for two years.[40] In his *History of Industrial Paterson,* published in 1882 at the height of Paterson's silk boom, Levi Trumbull summarized the significance of John Ryle:

> The people properly, and most naturally, esteem and almost venerate the worthy pioneer and indefatigable promoter of a magnificent industry that he has assisted to rear and foster from the day when he saw it represented by three or four hands, a little rude machinery and a half bale of silk, all on the top floor of the old Gun Mill, until to-day it can boast of 15,000 operatives, great mills filled from bottom to top with the most improved machinery, a consumption of raw material almost fabulous in amount, a production of $16,000,000 per annum, and, better than all, of the fact that not less than 25,000 mouths in Paterson are fed from "the fruit of the loom."[41]

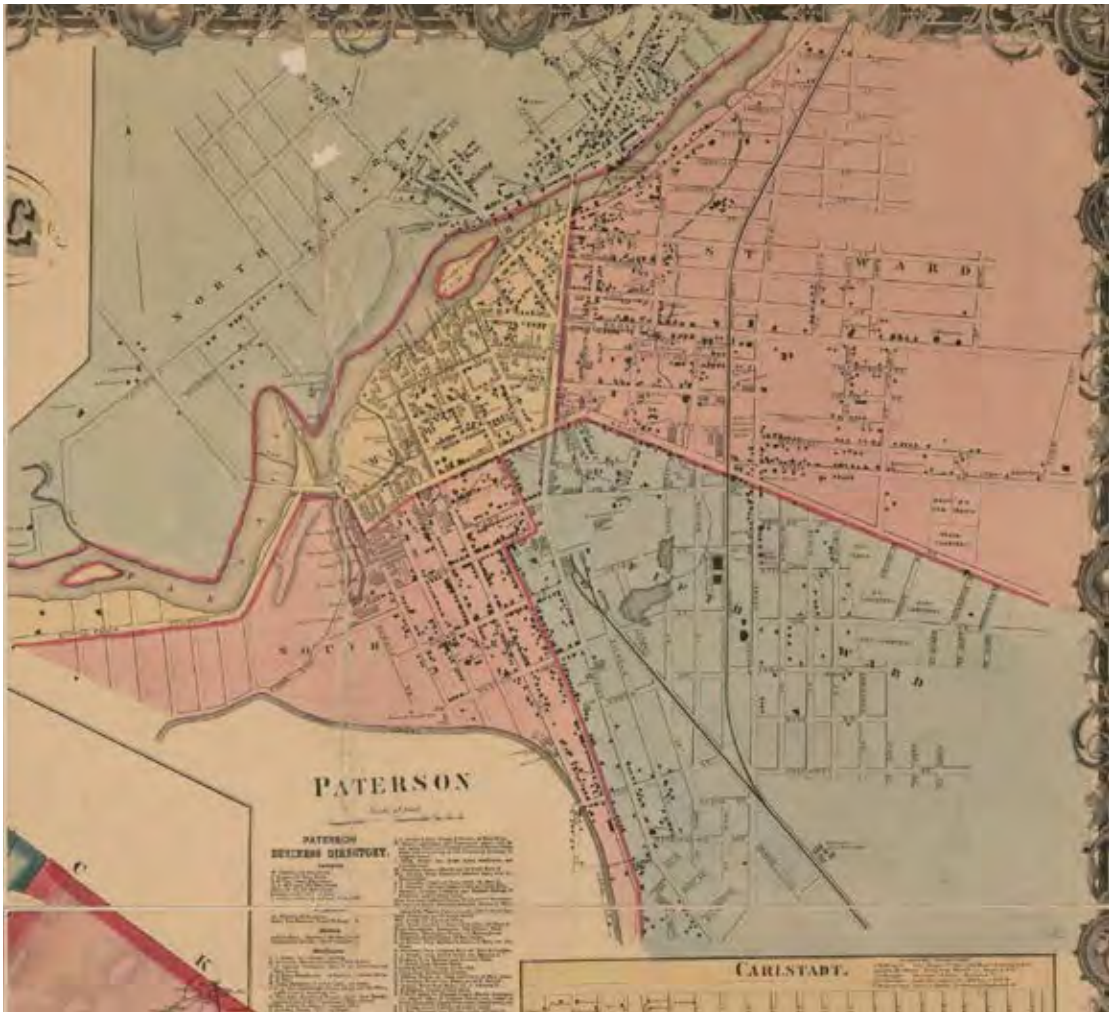

Figure 51: 1861 Map of Bergen & Passaic Co., Paterson detail (Library of Congress)

[40] Trumbull, *History of Industrial Paterson,* 181–182.

[41] Trumbull, *History of Industrial Paterson,* 182.

The Paterson Industrial Boom, 1870–1900

John Ryle was reportedly instrumental in bringing about changes in the way the federal government taxed foreign silk imports, both of raw silk and finished silk products.[42] The result of his efforts significantly improved the American silk industry throughout the United States, particularly in Paterson. Early attempts at producing American silk finished goods met with general failure owing to the high cost of importing raw silk and low tariffs on the popular fine imported silks, largely from England. The change began after 1861 with the passage of the first of four tariff increases on imported silk goods, many of them coming from Ryle's hometown of Macclesfield, England.[43] At the same time, the duties on imported raw silk were reduced, improving the economic outlook for the fledgling American silk industry. As a result, by 1870, the net value of silk production in the United States rose to approximately ten million dollars, up from just over three and a half million in 1860, and continued to rise through the turn of the twentieth century.[44]

By the end of the Civil War (1865), American silk ribbon and lace production led the growth of the industry. While the lace weavers maintained their factories in New York City, the larger ribbon manufactures concentrated in western Massachusetts and in Paterson, New Jersey, where land was relatively cheap and waterpower readily available. "Toward the end of the sixties," economist Frank R. Mason reported in 1910, "there seems to be an ever increasing number moving from Massachusetts, Connecticut, and New York to Paterson."

> The newcomers are mostly English or German. Such are Strange and Brother, who began the manufacture of ribbons in New York City in 1861–3, and who moved to Paterson in 1868. Louis Franke also began in New York, but joined the migration to Paterson. Wolfsohn, Meyenberg and Company started in 1866 in New York, but they too eventually moved to Paterson. Aub and Hackenburg set up a plant in Philadelphia in 1863. L. R. Stelle and Sons began at Utica, New York, but moved to Paterson in 1866. Messrs. A. Soleliac and Sons began the manufacture of ribbons at New York; three years later the plant was transferred to Paterson.[45]

The majority of these manufacturers produced silk ribbon, according to Mason, a relatively new product in the American market. The exodus of silk manufactures to Paterson

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[42] Trumbull, *History of Industrial Paterson*, 181. Economist Frank R. Mason noted in 1910 that the silk tariffs were raised in 1861 in part to help pay for the Union effort in the American Civil War (Frank R. Mason, "The American Silk Industry and the Tariff," *American Economic Association Quarterly*, 3rd Series, 11, no. 4 (Dec., 1910): 5, www.jstor.org/stable/3000045).

[43] Richard D. Margrave, "The Role of the Paterson, NJ Silk Industry in the 19th-Century Atlantic Economy," *Northeast Historical Archaeology*, 44, Article 7 (1975): 54, http://orb.binghamton.edu/neha/vol4/iss1/7.

[44] Mason, "The American Silk Industry and the Tariff," 5.

[45] Mason, "The American Silk Industry and the Tariff," 44–45.

continued into the 1870s, "until Paterson became recognized as the leading, almost the only, ribbon manufacturing city in the United States."[46] Between 1870 and 1880, the Paterson silk industry grew with the addition of the lucrative production of silk broadcloths. Mason attributes Paterson's desirability for new silk manufactures to its proximity to New York City markets. The 1880 silk production chart illustrates New Jersey's significantly higher value of product over New York, Connecticut, Massachusetts, and Pennsylvania, largely owing to the greater production of high-value broadcloths as well as ribbon.

PRODUCTION 1880.[15]

	Sewings	Broad Goods	Ribbons and Laces	Trimmings	Total
	Pounds.	*Yards.*	*Yards.*	*Pounds.*	*Value.*
New Jersey.....	25,580	6,975,655	8,794,100	50,405	$12,851,045
New York.....	88,765	1,427,439	10,302,696	403,330	9,368,025
Connecticut	394,981	2,253,070	8,541,235	695	5,438,075
Massachusetts .	273,816	99,120	573,320	39,787	3,491,093
Pennsylvania ..	23,110	101,000	1,915,000	192,824	2,853,165

[15] Wyckoff, *Silk Manuf.*, p. 58.
[16] U. S. Census 1880, in Wyckoff's *Silk Manuf.*, pp. 57-8.

Figure 52: Silk production by state, 1880 (Mason, "The American Silk Industry and the Tariff," 47)

As noted previously, Trumbull's 1882 *History of Industry in Paterson* listed eighty-nine silk operations in Paterson between the years 1840 (when John Ryle started) and 1881. Most of the manufactories were small, occupying a single room or mill floor as tenant of one of the larger owners—the "Silk Barons." The following list (from Trumbull, 1882, with additions from Brockett, 1876, where noted), identifies those larger owners who constructed, or reconfigured, some of the iconic Paterson mill buildings.[47]

Robert Hamil and James Booth (Hamil & Booth): 1855, started in Beaver Mill, bought Passaic Mill in 1862, enlarged several times, called "Passaic Silk Works"; 1872 purchased the "Godwin Cotton Mill" and renamed it Hamil Mill; made ribbons and twilled silks; 1873 added gros-grain and black dress silks; 1874 "added fringed silks, Jacquard weaving, &c." (Brockett, 74). In 1881 they had 400 looms, 30,000 spindles, and 1,140 employees.

Robert and Henry Adams (R. & H. Adams): 1857, Harmony Mill cotton mosquito net weaving, burned; 1871, occupied Essex Mill; 1875, rebuilt

[46] Mason, "The American Silk Industry and the Tariff," 45.

[47] Trumbull, *History of Industrial Paterson*, 198–255. The photographic collections at the Paterson Museum, the Passaic County Historical Society, and the Paterson Historic Preservation Commission include images of many of these buildings.

Industry Mill; 1876, rebuilt Harmony Mill for silk production; 1879 Industry Silk Mill.

William Brown and James Mayers (Brown & Mayers): 1859, dye works on Straight Street (after leaving the Ryle Gun Mill works); followed by Albert King in 1863.

John O'Neill (John O'Neill & Sons): n.d., dye works on corner of Paterson and Ellison streets (later Weidmann Works).

Thomas N. Dale (Dale Manufacturing Co.): 1862, built Dale Mill (1865), purchased the site from the S.U.M., "part of the old Colt Pond."

Albert Tilt (B.B. Tilt & Son): 1862–1864, occupied Phoenix, Beaver, and Watson mills (whole or in part); 1865, acquired controlling interest in Phoenix Manufacturing Co.—converted from cotton to silk manufactures.

Charles A. Buckley (American Velvet Co.): 1866, built "The Velvet Mill" (Essex Street); later occupied by William Strange & Co.

Dunlop & Malcolm: 1866 (John Dunlop since 1873), built Union Silk Works (Straight Street), made sewings and machine twist.

Claude Greppo: 1867, built the Greppo Mill, dye works; 1871, built a chemical works on Kossuth Street in Totowa section; 1876, partnership with Jacob Weidmann.

George Dexter, Catholina Lambert, Charles Barton (Dexter, Lambert & Co.): 1866, Dexter Mill (1866) and Lambert Mill (1879); "1874 they added power-loom machinery to their mills, and have since added twilled and figured silk and Jacquard weaving to their previous manufactures of dress trimmings and ribbons" (Brockett, 75).

William Strange & Co.: 1868, "This firm have two mills at Paterson, and are the largest silk ribbon manufacturers in the country, employing over 700 operatives" (Brockett, 77). In 1881, the company had 260 looms, 18,000 spindles, and 1,000 employees.

George Frost (George Frost & Sons): 1870, occupied part of Union Silk Mill; 1880 built Albion Mill on Madison St.

George Morlot's Dye Works: 1870, built complex at Riverside; 1881, included thirteen buildings.

Dwight Ashley and Peter Bailey (Ashley & Bailey): 1873, started "in a small room on Straight street," then moved to part of the Jaffray Mill; 1880 they built the Riverside Mill "near the River street crossing of the Erie Railway, at Riverside," powered by a steam engine.

Louis Franke: 1876, Pope's Mill, sash ribbons and marabout trimmings, built Franke Silk Mill in 1880.

Jacob Weidmann (Weidmann & Greppo/Weidmann Silk-Dying Co.): 1876, partnership with Greppo dye works, dissolved 1878; 1878, works enlarged, fronting eight lots on Paterson St.; 1879, new works on five lots on other side of Paterson St.; "the largest in the United States" (Brockett, 79).

H. H. Freeman & Co.: 1876, occupied Union Silk Works; 1881, "the firm removed to a new frame mill, erected on a plot of thirty city lots purchased from the Society for Establishing Useful Manufactures, on Front street, Totowa, above the Falls bridge." Located well-away from the S.U.M. raceways, the relatively small Freeman mill had "An 18 horse-power boiler and a 15 horse-power engine furnishes the power to drive the machinery."

John and Joseph Nightingale (Nightingale Brothers): 1878, sons of James Nightingale, Sr.; 1881 purchased the Boudinot Mill on corner of Straight and Ellison St., renamed Nightingale Mill, "all classes of silk fabrics, plain and figured dress goods, satins, tie silks, brocades, tissues and gauzes, with a fine grade of handkerchiefs as a specialty."

Robert Adams & Co.: 1881, rebuilt the Hamilton Mill, also known as Bachmann Mill.

(See Appendix C: Nelson and Shriner, Chart of Silk Industries, 1891.)

Figure 53: 1877 Atlas of Passaic Co., Paterson Wards 4, 5, 6 & 7 (Library of Congress)

Other Paterson Industries

Even as the rapid rise in Paterson silk production replaced the old cotton industries, many of the other established manufactures survived and thrived through the second half of the nineteenth century. Long-established Paterson machine shops continued to supply mill machinery and produced locomotives for markets in the United States and abroad. Specialized textiles, paper, beer, and building materials all continued to fill their niche markets. At the same time, new industries, like the Ireland-based Barbour Flax Spinning Company (see below), set up production in Paterson as a way around the Civil War tariffs.

With the expansion of industry in Paterson came an even greater expansion of the city's population, and providing life's necessities, and luxuries, became industries themselves. In 1791, breweries were considered a necessity when the S.U.M. included them on their list of prospective manufactures. "Brewing beer," wrote Trumbull, "must be regarded as one of the important industries of Paterson, it being estimated that the aggregate product is at least 103,030 barrels yearly."[48] Among the "chief establishments" Trumbull listed were the beer producers: Passaic Spring Brewery, Eagle Brewery, Red Star Brewery, Burton Brewing Company; two producers of ale, Sprattler & Mennel and Mrs. Christina Braun; "and one or two others of lesser note."[49]

The rock quarrying operation at Mount Morris is among the oldest industries surviving in Paterson, through the nineteenth century. Quarrying began at Mount Morris, under the direction of Pierre L'Enfant, to supply rock for construction of the aqueduct, raceways, mills, and houses. Demand accelerated in the 1830s for both the overlying "trap rock," used for buildings but primarily crushed for railroad and road beds, and the underlying brown sandstone, prized for its attractive color and ease of preparation for building construction. As the Mount Morris quarrying operation opened land along the river, the S.U.M. conveyed the land in small lots, first a 450-foot strip to the Patent Arms Manufacturing Company in 1836, and again in 1851, and to John Ryle in 1853.[50] Quarrying on the remaining sections of S.U.M.-owned Mount Morris continued under the firm of McKiernan & Bergin, producing stone for homes and industries in Paterson and elsewhere as late as 1897.[51] The 1899 Sanborn Fire Insurance map shows buildings of the Knipscher & Maass Silk Dyeing Company located on the site of the former rock-crushing mill.

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[48] Trumbull, *History of Industrial Paterson,* 290.

[49] Trumbull, *History of Industrial Paterson,* 290.

[50] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* Appendix E, Table 1.

[51] Geological Survey of New Jersey, *Annual Report of the State Geologist for the Year 1897* (Trenton, NJ: The John L. Murphy Publishing Co., 1898): 81, 155, https://books.google.com.

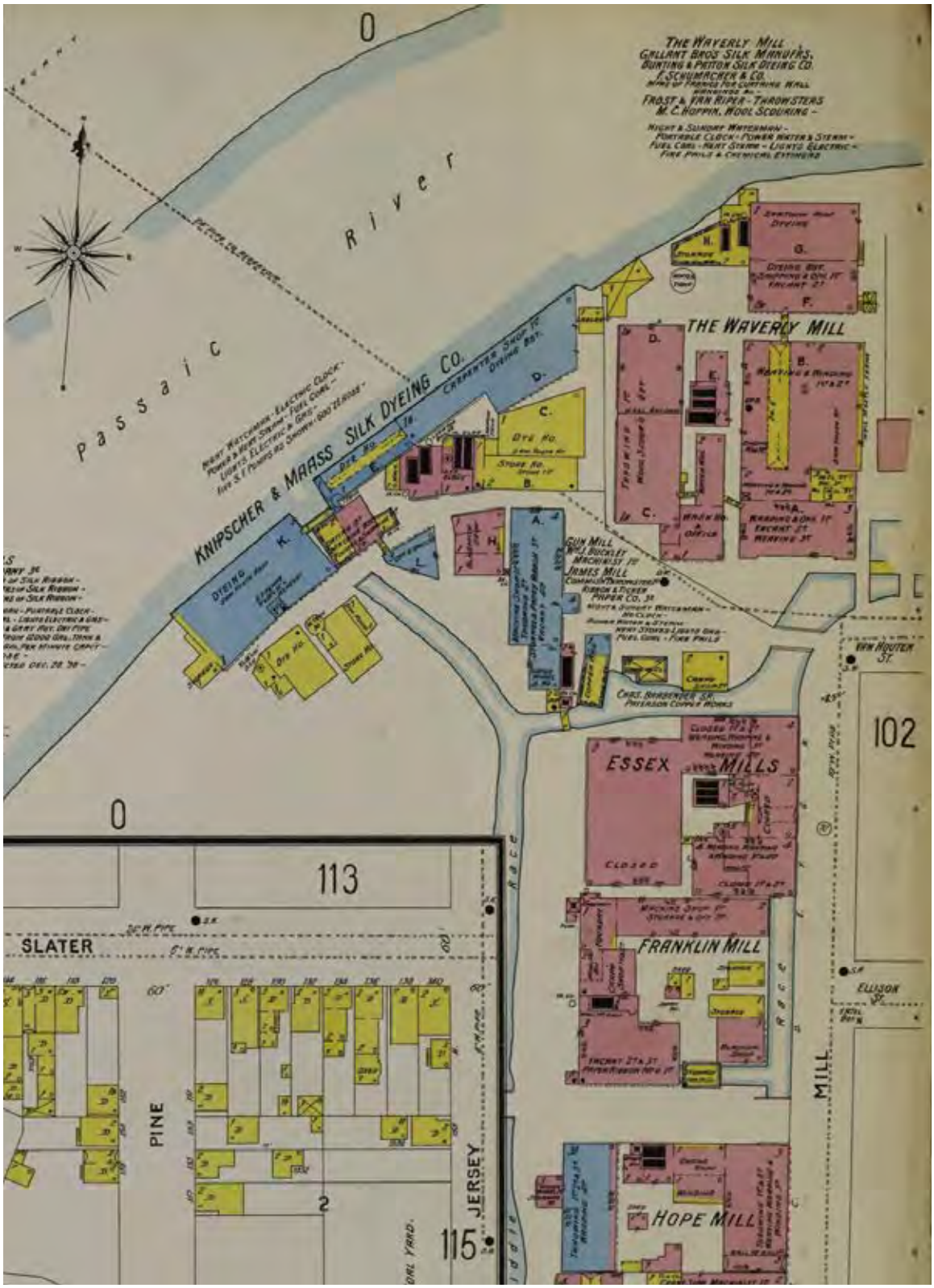

Figure 54: 1899 Sanborn map, showing Knipscher & Maass Silk Dyeing Company (Library of Congress)

The Dolphin Mill, also known as the "Scottish Mill" or "American Hemp Manufactory," was among the specialty textile producers which survived Paterson's ups and downs. It was established in 1844, at that time producing "hemp carpets, Brussels warp and filling, Venetian filling, rug warps, etc."[52] Jute products were added to the company's manufactures in 1850, including jute carpets, and "tailor's linings," which were reportedly the first of its kind.[53] "In 1851," according to William Nelson, "the property passed into the hands of John Taylor Johnson and Robert L. Taylor, the uncle of the former, and they immediately procured a charter as the 'Dolphin Manufacturing Company,' so named after one of Mr. Taylor's numerous ships, of which he was specially fond."[54] Johnson and Taylor were both natives of Scotland who immigrated to New York City as merchants.

The first Dolphin Company factory was located on Spruce Street, on a lot purchased from the Barbour Company. The company enlarged the building several times, first in 1869 with the addition of a third story. In 1881, they added a three-story brick building to the front of the old mill, fronting one hundred and ten feet along Spruce Street and one hundred and forty feet deep. Shortly thereafter a "new boiler-house and engine-house" was added and they began digging out the rock hill behind the mill, "running up to the ancient Stony road," to make room for more additions.[55] Though still using waterpower to run their turbines, the addition of the steam power apparatus was a sign of the times.[56] The 1887 Sanborn Insurance Company maps of Paterson show a number of industries with "boilers" added to their power sources.

In the wake of the US Civil War import tariffs, imposed in part to help the Union pay for the ongoing war, Thomas and Robert Barbour brought a branch of their family's successful flax spinning manufactory in Ireland to Paterson in 1864. The Barbour Flax Spinning Company purchased and occupied the Passaic Mill No. 2 on Spruce Street (formerly occupied by the Ivanhoe Paper Manufacturing Co.), where they commenced operations. In 1877, they expanded with the construction of a large mill encompassing the block surrounded by Grand, Spring, Prince, and Slater streets. Located off the S.U.M. raceways, the Grand Street mill operated solely on steam power. When the old Passaic Mill burned in 1879, the Barbour Co. built a new mill in its place, known as "Lisburn Mill." In 1881, the Barbour Company constructed a third mill, called the "Granite Mill," (still extant), on the corner of Spruce and Morris Streets.[57]

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[52] Trumbull, *History of Industrial Paterson,* 270; Clayton and Nelson, History of Bergen and Passaic, 457.

[53] Clayton and Nelson, *History of Bergen and Passai*c, 457.

[54] Clayton and Nelson, *History of Bergen and Passaic,* 457.

[55] Clayton and Nelson, *History of Bergen and Passaic,* 457. All three sections of the Dolphin Mill are still extant.

[56] Trumbull, *History of Industrial Paterson,* 272.

[57] Trumbull, *History of Industrial Paterson,* 275; Nelson and Shriner, *History of Paterson,* Vol. II, 358.

As noted in chapter 4, the Ivanhoe Manufacturing Company first began producing paper in Paterson in 1837 in the Passaic Mill No. 2, built by the S.U.M. for that purpose. In 1857, the company moved into a new, larger mill constructed on the adjoining lot on Spruce Street. Trumbull cited the "Paper-Maker's Directory" reporting that the company produced "writing, book and copying paper; amount, 7,500 lbs. every twenty-four hours."[58] The Ivanhoe wheelhouse (still standing) contained "a large Boyden turbine water wheel 87 in. in diameter, giving over 200 horse-power," along with "two smaller turbines driving other portions of the machinery." By 1887, several steam engines were added to power the factory, but by 1899, the Sanborn Insurance Company map showed the Ivanhoe complex as "vacant and dilapidated."

Machine shops had been integral to manufacturing in Paterson since its start with the S.U.M. in 1791, building the machines which powered the city's cotton boom of the nineteenth century. Working initially largely with wood machine parts, the industry evolved to employ more iron and steel as technologies progressed. By 1850, Paterson machine shops included a foundry to cast iron parts, according to Trumbull, to the tune of "forty to fifty tons weekly."[59]

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[58] Trumbull, *History of Industrial Paterson,* 283.

[59] Trumbull, *History of Industrial Paterson,* 73–74, 80.

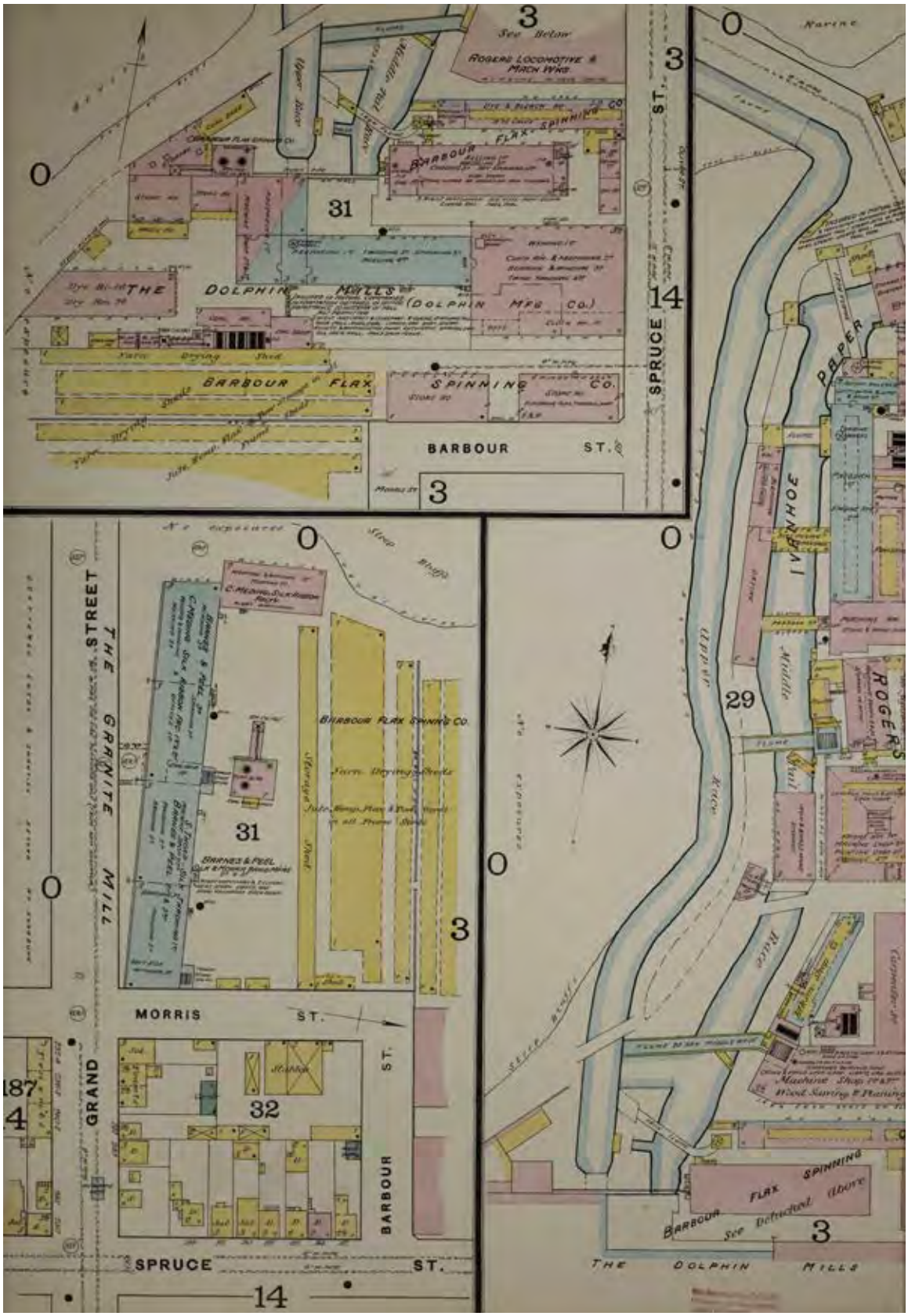

Figure 55: 1887 Sanborn map showing Dolphin and Barbour mills (Princeton Archives)

Figure 56: Barbour Granite Mill (Library of Congress)

As the century progressed, several of the shops became important manufacturers supplying industrial machines nationally and internationally. One Paterson shop, the Danforth Locomotive & Machine Company, made important improvements in silk processing machinery according to Linus Brockett in his 1876 report on American silk manufacturing:

> Our American silk manufacturers—especially those in the sewing-silk and twist trade—have long enjoyed the reputation of having improved materially on the European machinery for throwing silks; but the throwing machines built by the Danforth Locomotive & Machine Co. at Paterson, are greatly in advance of any other produced in Europe or America. These machines, of which we give engravings on another page, are adapted to either tram or organzine; they are made either two or three stories high (the third or upper most tier economizing room, and increasing the capacity of the machine fifty per cent), and of any length or number of spindles desired. The Company have finished one set 32 and another 37 feet long, for Paterson silk manufacturers. The former set

> contains 684 spindles. It is claimed that these frames are capable of producing nearly or quite double the amount of work per spindle as compared with the latest style of European frames; while, large as they are, their mechanism is so true and perfect, and runs so evenly and accurately, that they can be managed by two attendants.... This Company also build ribbon looms with shuttles for weaving twenty-eight ribbons in each loom.[60]

As implied by its name, the Danforth Locomotive & Machine Company, along with several other shops in Paterson, also specialized in the manufacture of steam locomotives (described previously in Chapter 4). As railroading expanded exponentially through the nineteenth century, locomotives built in Paterson machine shops spread across the United States and Europe. By 1887, the building complexes of the Rogers Locomotive & Machine Works, Grant Locomotive Works, and Cooke (formerly Danforth) Locomotive & Machine Works covered nearly four industrial blocks

Paterson machine shops developed a national reputation for their steam engines and boilers in the burgeoning industrial steam power market. The J. C. Todd, or Todd & Rafferty, Machine Works began operations building mill machinery in 1847, and by 1850 had purchased the "Home Mill" on the S.U.M. "lower raceway" (Van Houten Street). The company specialized in building flax and hemp machinery. In 1872, after acquiring the Rafferty, Smith Company, they added steam engine construction as well, both small boat engines known as "Baxter Marine Engines" and the large, stationary horizontal steam engines which powered factories. The Rafferty, Smith Company reportedly built many of the engines used in Paterson mills.[61] Notably, in 1877, John Holland hired the Todd & Rafferty shop to design and build the engine for his first experimental submarine. Holland brought the vessel to Paterson for the installation of the works and launched it in the Passaic River. Unfortunately, the engine failed and was not used during Holland's test run. The submarine was scuttled in the river and later salvaged in 1927; it is currently part of the Paterson Museum collection.[62]

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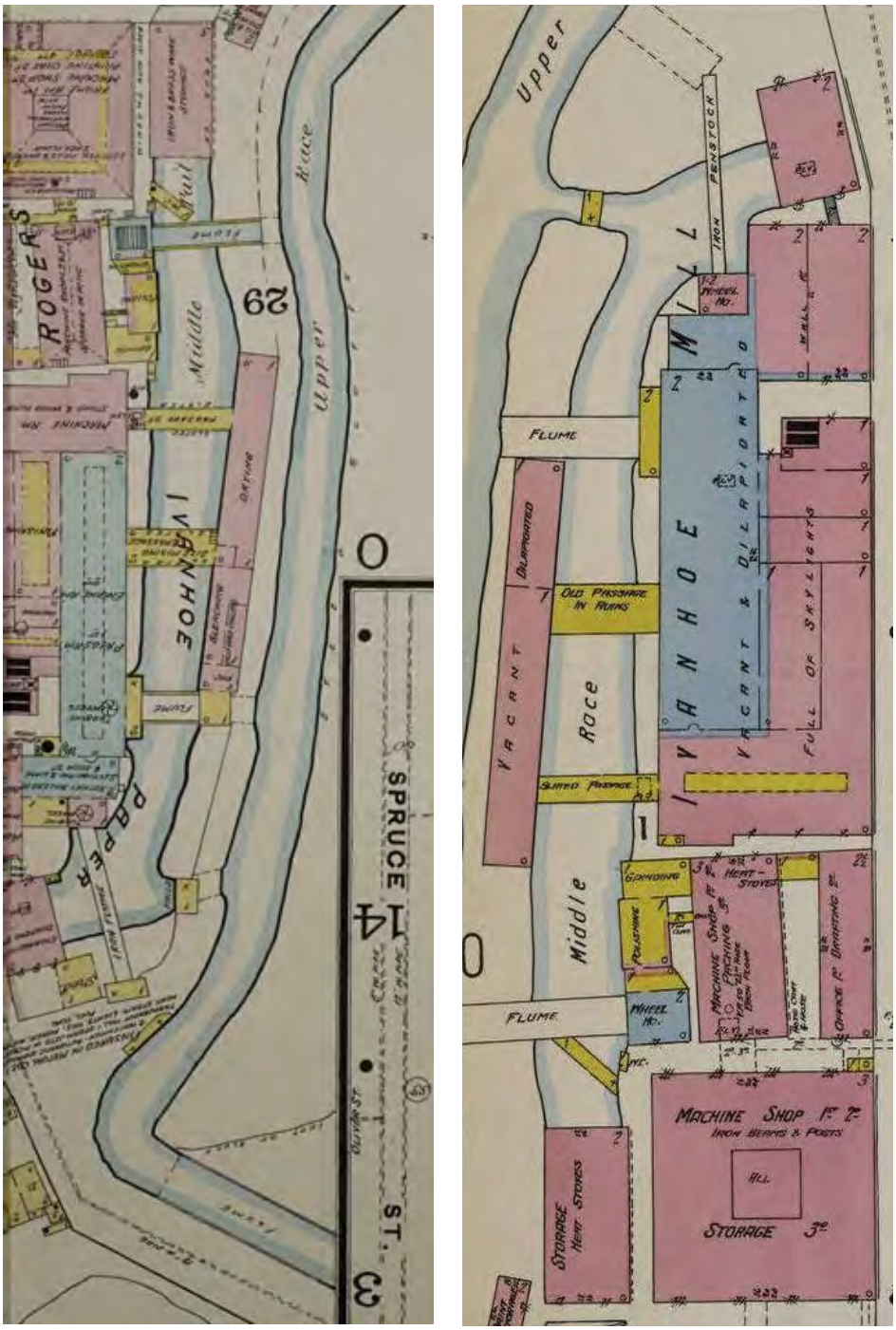
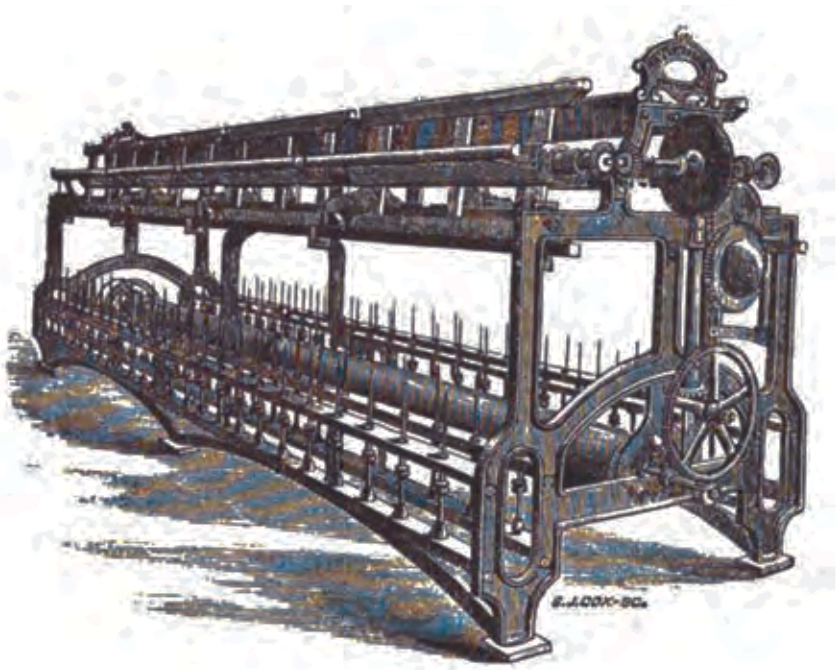
[60] Brockett, *The Silk Industry in America,* 91–92.

[61] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.50, citing Clayton and Nelson, *History of Bergan and Passaic,* 196.

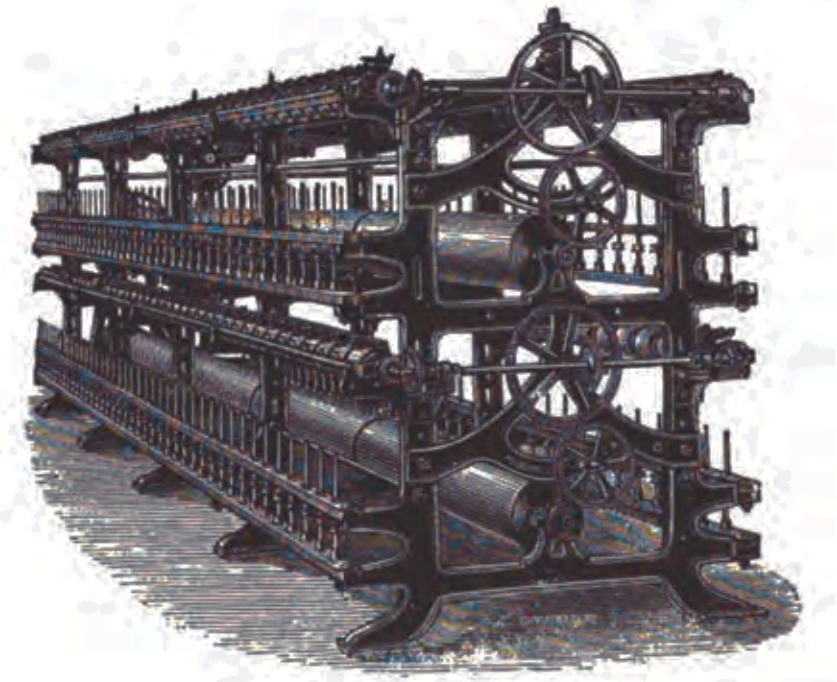
[62] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.44–3.50.



Figures 57 *(left)* & 58 *(right)*:
1887 and 1899 Sanborn Maps showing the Ivanhoe Paper Mill complex (Princeton Archives)



SILK REEL MILL.



SILK SPINNING FRAME.

Figure 59: Cast iron reeling and spinning machines built by the Danforth Locomotive Co. (Brockett, ***The Silk Industry,*** p. 90, 1876)

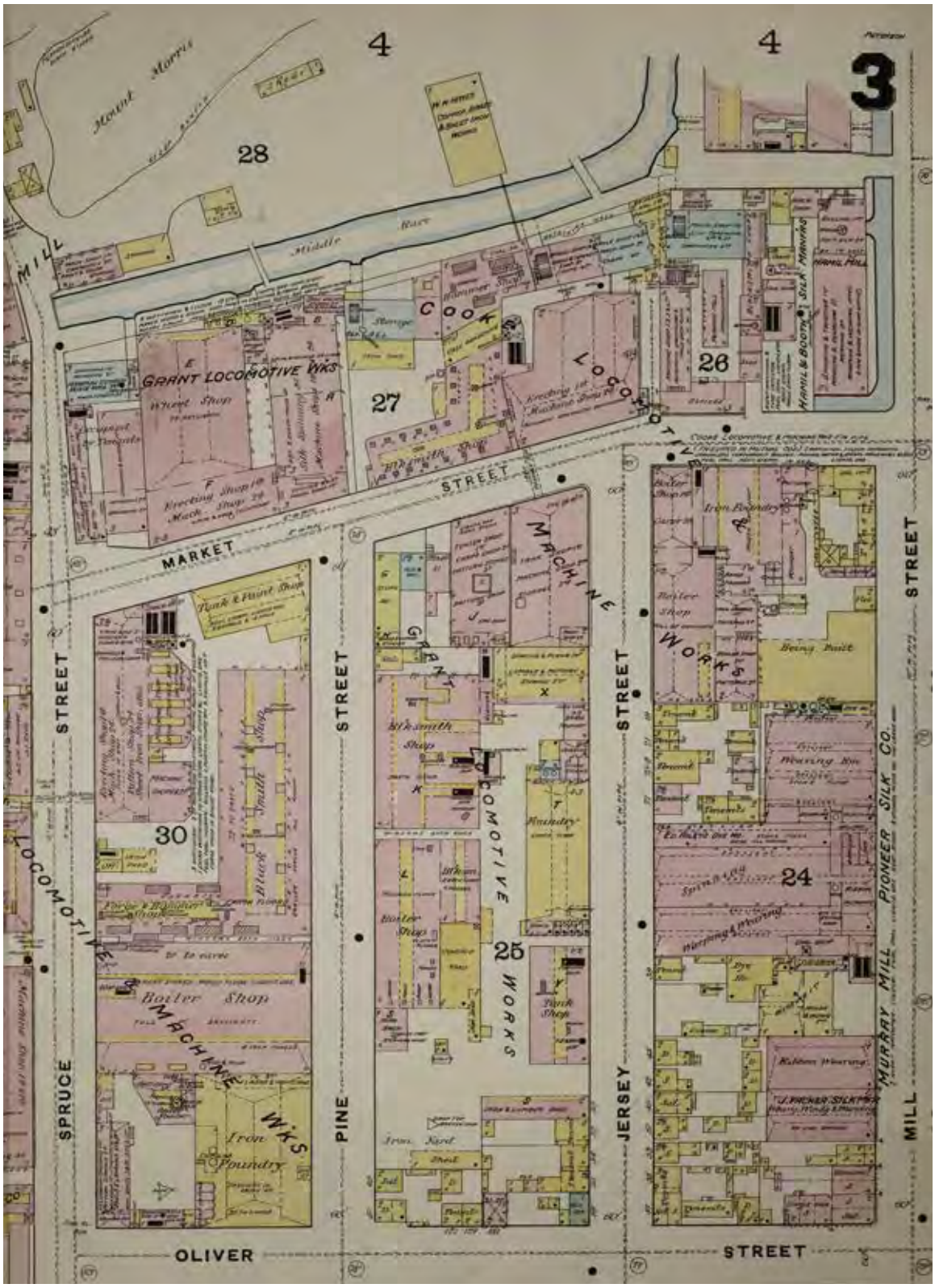


Figure 60: 1887 Sanborn map showing the Grant Locomotive Works and Cooke Locomotive & Machine Works (Princeton Archives)

Figure 61: Holland's first experimental submarine (foreground), salvaged from the Passaic River at Paterson (Paterson Museum)

Role of the S.U.M. in Supplying Power Evolves

In 1787, Tench Coxe predicted the use of steam power in manufactories: "'Tis probable also that a frequent use of steam engines will add greatly to this class of factories."[63] Steam power was in its infancy then, developing largely to improve riverboat transportation, though Coxe clearly envisioned its potential in industry. Development of the railroads in the 1830s accelerated refinement of the steam engine, which began in England, but was quickly imitated and improved in the Paterson machine shops.

Before the development of a stationary steam engine capable of producing enough power to operate a mill, waterpower remained the choice of most American manufacturers and the factories of Paterson were tied to the S.U.M. raceways. Though waterpower could

[63] Tench Coxe, "An Enquiry into the Principles on which a Commercial System for the United States of America Should be Founded.. .. Read before the Society for Political Enquiries, Convened at the House of His Excellency Benjamin Franklin, Esquire, in Philadelphia May 11th, 1787," 22, *Evans Early Imprint Collection*, accessed 5/10/2019, https://quod.lib.umich.edu/cgi/t/text/text-idx?c=evans;idno=N15882.0001.001;rgn=div1;view=text;cc=evans;node=N15882.0001.001:4.

be unreliable, depending upon seasonal changes along the rivers and creeks, steam engines required wood or coal fuel to operate, considered too expensive in fuel consumption relative to the free fuel of waterpower. Additionally, early steam-generated power remained insufficient to drive the machines of a large factory.[64] By the 1850s, high-compression boilers improved the outputs of stationary steam engines, ushering in a new era in the American manufacturing landscape. In 1853, the journal *Scientific American* reported on the growing the impact of stationary steam engine technology on American industry, observing that, "Steam power, for manufacturing purposes, is fast supplanting that of water in many places."[65] In 1857, E. B. Atterbury constructed a cotton mill on the corner of Straight and Ellison Streets, said to be the first cotton mill in Paterson built "away from the raceway," and the first mill operated by steam power.[66]

Through the expansion of the 1870s and 1880s, the ability to operate independent of the S.U.M. raceway system was important as traditional Paterson mill sites filled. Free of the raceways, manufacturers could purchase the larger lots available on the city's edges at lower prices. Additionally, increasing industrial and domestic demand for water from the Passaic seriously impacted the S.U.M.'s ability to fulfill its water power obligations.[67] By the 1880s, many of the Paterson factories included both water and steam power so as to stabilize their power source. In 1881, the Dolphin Mill added steam power to supplement the waterwheel, here described by Trumbull:

> an ingenious device used in gearing the engine acts as an assistant and governor of the water-wheel, so that the more water the less steam will be used, and it is so arranged that when the water is low the water-wheel can be immediately disconnected and the entire mill run by steam alone.[68]

The 1887 Sanborn maps show "steam boilers" in many of the factories, and many more located outside of the S.U.M. raceway district.

As a corporation the S.U.M. was vulnerable to individuals or companies leveraging ownership of large share percentages to control the activities of the corporation. In 1894, the New Jersey General Security Company purchased a controlling interest in the S.U.M. The trust company apparently owned controlling stakes in several other water companies operating within the Passaic River drainage, their purpose—to "maximize profits from selling water"—came at the expense of the S.U.M.'s contracted power agreements.[69] Most, like the Rogers Locomotive Company, were twenty-one-year leases negotiated years earlier

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[64] Hawke, *Nuts and Bolts of the Past,* 195, 208, 214.

[65] "Water and Steam – Waste of Power," *Scientific American* VIII, no. 33 (April 30, 1853).

[66] Clayton and Nelson, *History of Bergen and Passaic,* 414.

[67] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 5.37.

[68] Trumbull, *History of Industrial Paterson,* 272.

[69] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 5.37.

and attempts by the S.U.M. to alter the agreements met with strong resistance. In 1898, the Rogers Company protested new hardware required to regulate the flow of water into the Rogers turbines. Two years later, on December 1, 1900, company president Jacob S. Rogers, son of the founder Thomas Rogers, closed the Rogers Locomotive Company.[70]

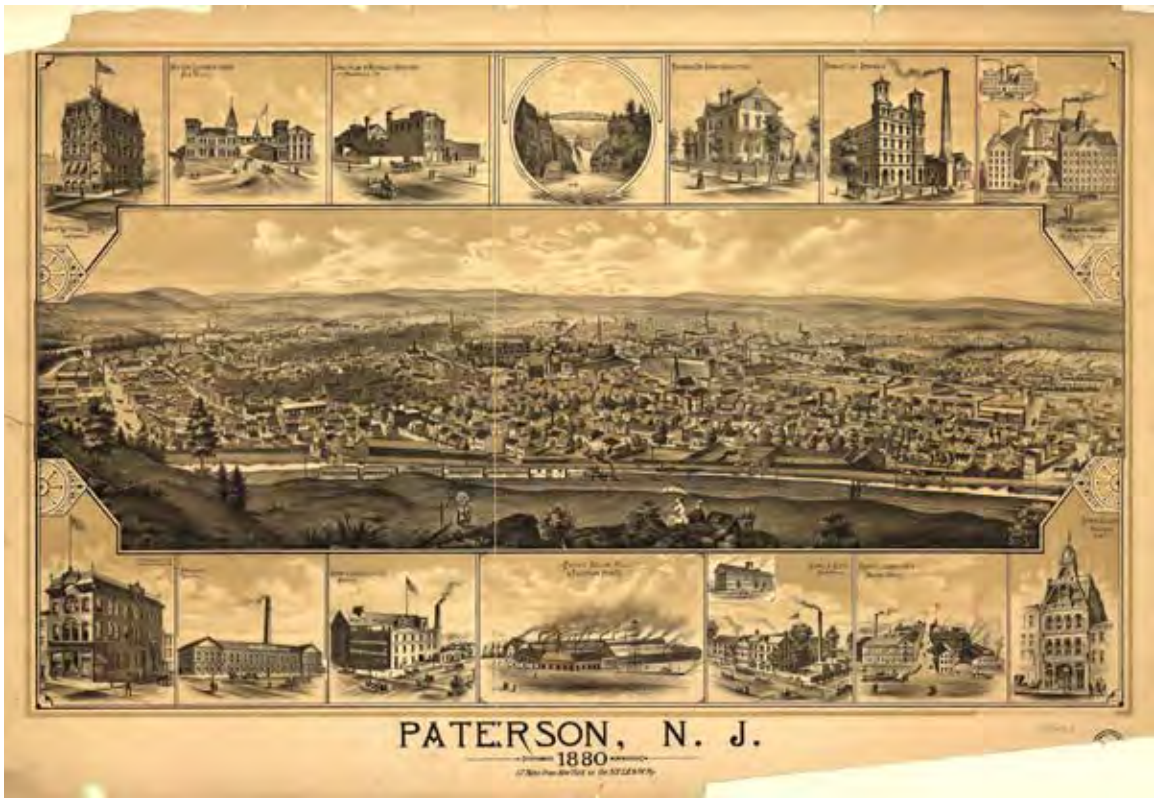

Figure 62: Bird's-eye view of Paterson, 1880 (Library of Congress)

The issue of power shifted with the turn of the twentieth century to electrical generation. Electric illumination had been available beginning in the 1880s, particularly after the 1888 establishment of the Edison Electric Illuminating Company on Van Houten Street.[71] Use of electricity to power the mills, however, did not develop momentum until after the shift from direct current (DC) to alternating current (AC), created a safer, more reliable system for electric industrial motors. By 1903, the S.U.M. was considering the generation of electrical power as part of their offering to tenant factories. John H. Cook, hydraulic engineer for the S.U.M., installed a test unit in the Ivanhoe Mill, "a large dynamo run by water power," which demonstrated the potential for hydroelectric power. Cook's

[70] Nelson and Shriner, *History of Paterson,* 353. "Speculators from Wall street bought the works and ran them for a short time, when they sold them to the American Locomotive Company, the corporation which already owned all the locomotive works in the country with the exception of the Baldwin works in Philadelphia and the Rogers works in Paterson." (Nelson and Shriner, *History of Paterson,* 353)

[71] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 5.56.

ultimate plan was to construct a hydroelectric plant at the Great Falls which, Cook reported, "could produce the same horsepower as the factory waterwheels using 43 percent less water."[72] This would serve the S.U.M.'s goal (as a subsidiary of the New Jersey General Security Company) to "maximize profits from selling water" by further diverting Passaic water from industrial uses.

The S.U.M.'s plan for hydroelectric power at the Great Falls was finalized after a 1910 study conducted by Westinghouse-Church-Kerr & Company. In addition to the hydroelectric plant, the consultants recommended a coal-fired steam generator as backup during periods of low water, estimated to be necessary approximately fifty days throughout a typical year. The hydroelectric plant was completed in 1914, and the coal plant in 1915. The company successfully negotiated with the mills still using waterpower to relinquish their long-term water leases and convert to electric by offering special rates. The change proved to be profitable for the S.U.M. because during its first decades in operation the plant produced more power than was being consumed by S.U.M. power leaseholders. As much as three-quarters of the plant's generated electricity was sold to the Public Service Company through the 1920s.[73] The new power sources also improved the manufacturer's profitability by reducing costs for materials, equipment, and labor associated with water and steam power in the factories.

As industry freed itself from its dependence on the waterpower delivered by the S.U.M. raceways—first by steam power, then electric power—factory sites expanded outward, fueling additional growth in Paterson. From fewer than one hundred manufacturers in 1870, and a population of just over 33,500, Paterson grew to include over 1,000 industrial "establishments" employing more than 37,000 workers and a total population of nearly 136,000 people by 1920.[74]

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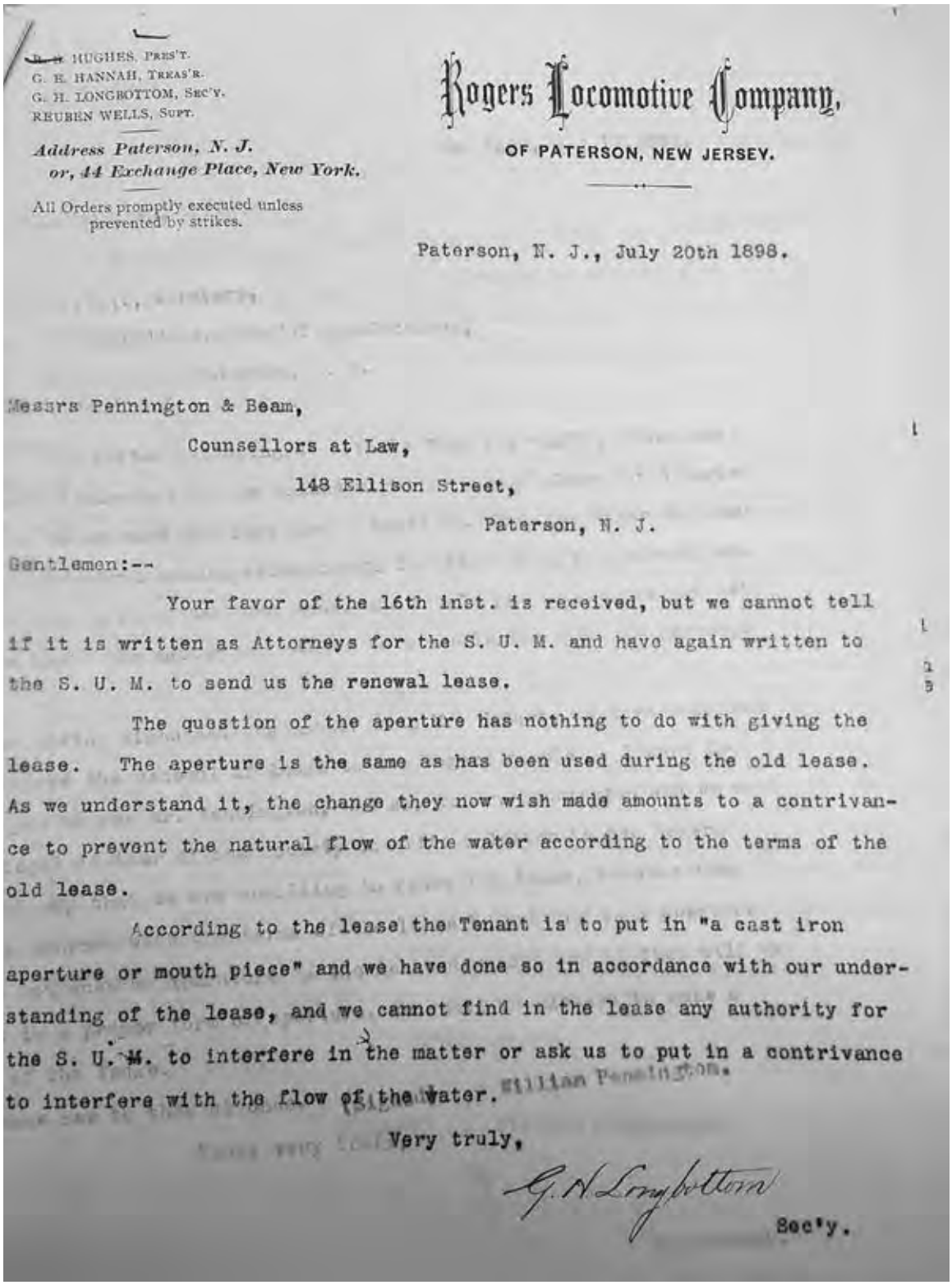
[72] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 5.57.

[73] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 5.57.

[74] "Historical Census Statistics On Population Totals by Race, 1790 to 1990, and by Hispanic Origin, 1970 to 1990, For Large Cities And Other Urban Places In The United States," *Library: Census Working Papers, United States Census Bureau*, www.census.gov/library/working-papers/2005/demo/POP-twps0076.html; "1920 Census: Volume 9. Manufactures, 1919, Reports for States, with Statistics for Principal Cities," 902, Table 10, *Library: Publications, United States Census Bureau*, www.census.gov/library/publications/1923/dec/vol-09-manufactures.html.



HUGHES, PRES'T.
G. R. HANNAH, TREAS'R.
G. H. LONGBOTTOM, SEC'Y.
REUBEN WELLS, SUPT.

Address Paterson, N. J.
or, 44 Exchange Place, New York.

All Orders promptly executed unless prevented by strikes.

Rogers Locomotive Company,

OF PATERSON, NEW JERSEY.

Paterson, N. J., July 20th 1898.

Messrs Pennington & Beam,

Counsellors at Law,

148 Ellison Street,

Paterson, N. J.

Gentlemen:--

Your favor of the 16th inst. is received, but we cannot tell if it is written as Attorneys for the S. U. M. and have again written to the S. U. M. to send us the renewal lease.

The question of the aperture has nothing to do with giving the lease. The aperture is the same as has been used during the old lease. As we understand it, the change they now wish made amounts to a contrivance to prevent the natural flow of the water according to the terms of the old lease.

According to the lease the Tenant is to put in "a cast iron aperture or mouth piece" and we have done so in accordance with our understanding of the lease, and we cannot find in the lease any authority for the S. U. M. to interfere in the matter or ask us to put in a contrivance to interfere with the flow of the water.

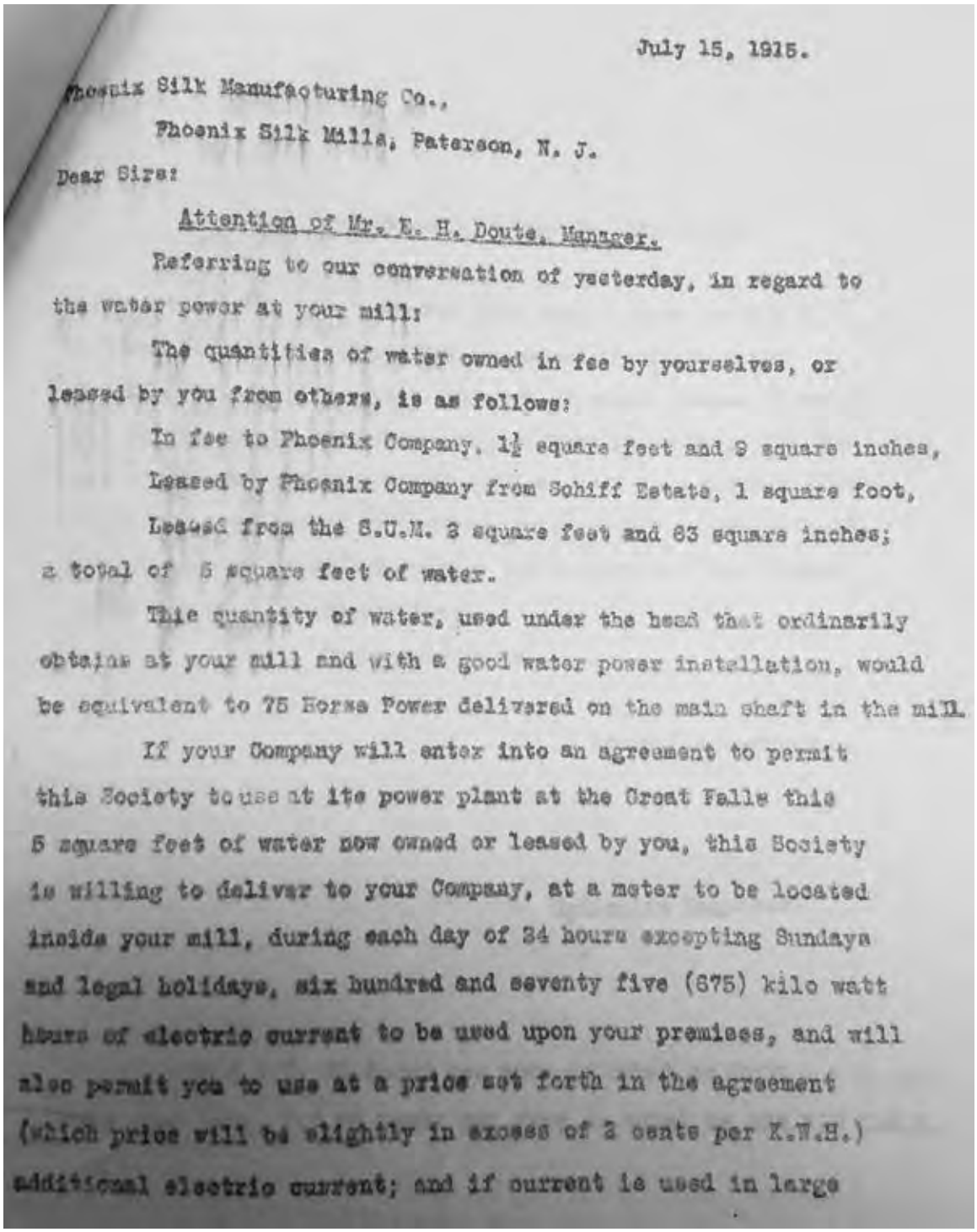
Very truly,

G. H. Longbottom

Sec'y.

Figure 63: 1898 letter from G. H. Longbottom (Rogers Locomotive secretary) to S.U.M. attorneys (Paterson Museum)

Figure 64: S.U.M. Power Plant, 1915 (Paterson Museum)



July 15, 1915.

Phoenix Silk Manufacturing Co.,
Phoenix Silk Mills, Paterson, N. J.

Dear Sirs:

Attention of Mr. E. H. Doute, Manager.

Referring to our conversation of yesterday, in regard to the water power at your mill:

The quantities of water owned in fee by yourselves, or leased by you from others, is as follows:

In fee to Phoenix Company, 1½ square feet and 9 square inches,
Leased by Phoenix Company from Schiff Estate, 1 square foot,
Leased from the S.U.M. 2 square feet and 83 square inches;
a total of 5 square feet of water.

This quantity of water, used under the head that ordinarily obtains at your mill and with a good water power installation, would be equivalent to 75 Horse Power delivered on the main shaft in the mill.

If your Company will enter into an agreement to permit this Society to use at its power plant at the Great Falls this 5 square feet of water now owned or leased by you, this Society is willing to deliver to your Company, at a meter to be located inside your mill, during each day of 24 hours excepting Sundays and legal holidays, six hundred and seventy five (675) kilo watt hours of electric current to be used upon your premises, and will also permit you to use at a price set forth in the agreement (which price will be slightly in excess of 2 cents per K.W.H.) additional electric current; and if current is used in large

Figure 65: 1915 letter from S.U.M. to Phoenix Silk Manufacturing Co. (Paterson Museum)

902 MANUFACTURES—NEW JERSEY.

TABLE 10.—SIZE OF ESTABLISHMENTS, BY AVERAGE NUMBER OF WAGE EARNERS, FOR SELECTED INDUSTRIES AND FOR CITIES: 1919—Continued.

INDUSTRY AND CITY.	TOTAL.		ESTABLISHMENTS EMPLOYING—																	
			No wage earners.	1 to 5 wage earners, inclusive.		6 to 20 wage earners, inclusive.		21 to 50 wage earners, inclusive.		51 to 100 wage earners, inclusive.		101 to 250 wage earners, inclusive.		251 to 500 wage earners, inclusive.		501 to 1,000 wage earners, inclusive.		Over 1,000 wage earners.	
	Establishments.	Wage earners (average number).	Establishments.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
Total for cities	7,984	322,495	811	3,389	7,987	1,734	19,658	915	30,037	415	27,394	303	50,040	185	31,807	74	49,423	33	146,534
ASBURY PARK	60	359	12	34	72	10	109	3	130	1	91								
ATLANTIC CITY	154	955	15	102	331	28	313	6	201	3	236								
BAYONNE	152	14,904	8	58	169	39	344	18	613	9	609	10	1,573	6	2,420	3	1,900	3	7,164
BELLEVILLE	48	1,359	4	23	56	3	47	5	187	6	446	4	581	2	540				
BLOOMFIELD	59	5,150	6	15	31	12	159	10	301	3	228	7	1,243			2	1,588	1	1,600
BRIDGETON	87	2,229	3	37	88	17	179	17	591	8	523	4	495			1	520		
CAMDEN	350	40,906	44	120	324	68	725	38	1,288	22	1,553	21	3,658	11	3,889	8	5,314	3	26,100
CLIFTON	49	3,205	3	17	38	12	118	4	123	4	325	4	591	5	1,995				
EAST ORANGE	79	2,653	12	45	105	8	104	1	21	3	201	2	281	2	687	2	1,209		
ELIZABETH	220	18,259	33	86	309	57	427	30	853	18	1,344	8	1,226	2	962	2	1,204	3	12,000
ENGLEWOOD	29	259	5	14	42	3	47	5	36			1	102						
GARFIELD	30	6,025	7	23	48	10	114	6	192	3	221	2	349	1	377	3	2,318	1	1,409
GLOUCESTER	21	6,225	3	5	15	2	17	2	61	1	70	3	580					2	5,498
HACKENSACK	45	938	8	19	56	16	160					1	163	1	280				
HARRISON	63	13,036	6	21	51	11	143	6	252	5	481	5	770			2	1,051	4	10,298
HOBOKEN	180	15,403	34	113	279	60	750	30	995	23	1,781	8	1,191	6	2,062	2	1,697	3	6,581
IRVINGTON	60	1,856	0	43	103	18	187	3	251	10	590	5	705						
JERSEY CITY	806	50,281	65	424	1,060	120	2,009	90	3,128	41	3,303	37	5,935	22	7,325	9	5,520	7	8,815
KEARNY	40	14,890	4	15	39	15	174	2	125	2	163	2	260	1	409	2	1,528	3	12,000
LONG BRANCH	56	841	8	33	70	12	130	4	134	3	207	2	310						
MILLVILLE	44	3,827	3	23	45	8	80	3	60	2	113	2	225	2	647			2	2,581
MONTCLAIR	34	281	5	19	64	6	73					1	132						
MORRISTOWN	56	248	11	32	76	11	99	2	73										
NEW BRUNSWICK	138	7,073	18	64	125	10	202	11	372	10	782	9	1,170	4	1,357	2	1,343	1	1,728
NEWARK	2,165	96,707	213	838	2,043	502	6,030	227	6,720	156	11,082	97	18,328	51	22,035	15	9,450	6	22,534
ORANGE	61	2,782	13	41	84	8	79	6	202	3	228	5	945	3	1,118				
PASSAIC	254	18,203	31	111	226	29	341	25	817	17	1,144	3	865	8	2,711	4	2,600	5	9,498
PATERSON	1,544	37,217	70	315	735	383	3,487	203	6,832	88	6,487	56	8,199	17	5,022	6	4,493	1	1,085
PERTH AMBOY	124	9,167	18	60	130	12	137	11	353	13	996	8	1,418	3	1,180	2	1,223	3	3,794
PHILLIPSBURG	53	5,403	8	19	44	4	57	3	114	9	630	6	1,200	1	418			3	2,957
PLAINFIELD	64	3,423	17	47	110	14	150	5	129	4	335	3	420	1	290	1	837	1	1,022
RAHWAY	26	1,697	3	14	22	8	91	2	67	5	331	2	390	3	780				
TRENTON	289	24,547	46	170	300	67	782	24	1,099	24	1,812	27	4,702	12	4,018	7	5,187	3	6,426
UNION	118	1,938	18	64	128	37	392	13	404	3	143	1	199	1	440				
WEST HOBOKEN	307	3,935	38	164	395	93	1,012	12	377	4	253	3	415	1	310	1	734		
WEST NEW YORK	192	3,208	12	74	200	68	732	22	714	12	903	4	640						
ALL OTHER CITIES[1]	47	6,334	6	34	68	7	98	3	97	1	63	3	284			1	314	3	4,000

[1] All other cities comprise Roosevelt, Summit, and West Orange, to avoid disclosure of individual operations.

Figure 66: Manufacturing census table for New Jersey, compiled in 1919 for the 1920 census (US Census Bureau)

Paterson Layers: "Silk Barons" and Mill Workers

The ethnic composition of Paterson's population of mill owners, workers, and their families between 1870 and 1920 is a significant theme. The specific industries carried on in Paterson helped determine the makeup of the city's population—particularly the silk industry, but also other textiles and machinery. Great Britain's early industrial development, focused primarily on textile production, and its close ties to the United States resulted in an early majority of Anglo owners and workers in Paterson. In the later decades of the nineteenth century and early twentieth century, immigrants from other silk-producing European nations—France, Germany, Italy, Switzerland, and Poland—diversified the population.[75]

75 Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 4.4.

With the implementation of the 1860s silk tariffs, the American silk industry rose at the expense of the English silk industry—devastating the industrial towns in England, but most particularly in the Cheshire town of Macclesfield. The exodus began with John Ryle and James Mayers, who left Macclesfield in 1839 to try their luck in the United States. After Ryle and Mayers established themselves in Paterson, others from Macclesfield followed: Thomas Rowson (John Ryle's father-in-law), opened a silk mill in 1858–59; John C. Ryle (John C. Ryle & Co.), arrived in Paterson in 1865 and in 1876 established the Central Silk Mill; in 1866, J. Phillips Mackay was employed by John Ryle at the Murray Mill and by 1878 owned the Addy Mill; George Frost (George Frost & Sons) arrived from Macclesfield in 1870; the Grimshaw Brothers opened a mill on Pearl Street in 1872, then moved to the Union Works and Dunkerly Mill, then to the Arkwright Mill where they made silk handkerchiefs and "novelties," and in 1878 they purchased the Greppo Mill; and Peter Bailey (Ashley & Bailey) opened a Paterson mill in 1873.[76]

John Ryle and the mill owners who followed him became known as the "Silk Barons" of Paterson. Perhaps none is better known than Catholina Lambert, who emigrated from Yorkshire, England, and by 1861, was majority owner of Dexter, Lambert, & Company. Lambert lived on a country estate "at South Paterson" from 1861 to 1892. During that time, he expanded the company to include four mills, three in Paterson and one in Hawley, Pennsylvania, with over one thousand employees.[77] In 1892, he purchased land on Garret Mountain where he constructed his elaborate stone mansion called Belle Vista.[78] The hilltop mansion sat outside the city limits, overlooking the industrial streets occupied by the men, women, and children who labored in the Dexter and Lambert mills.

Lambert Castle, as it became known, represented the height of the "Silk Baron" era in Paterson. Before the post-Civil War expansion, factory owners like John Ryle lived close to the mill operations. The house occupied by John Ryle from 1849 to 1859 was a relatively simple brick and frame house, certainly of much higher quality than those of his employees, but sited within view of his city mills. Still, this section of Paterson was at the time referred to as "Quality Row," according to an 1873 interview with Dr. A. W. Rogers, "where all the leading people lived, and where all the money was made to erect the handsome houses in the eastern part of the City."[79]

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[76] Trumbull, *History of Industrial Paterson,* 228.

[77] Trumbull, *History of Industrial Paterso*n, 200–202.

[78] Nelson and Shriner, *History of Paterson,* 344.

[79] *Paterson Daily Press,* September 3, 1873, as cited in Donald G. Presa, "Thompson, Daniel and Ryle, John Houses," National Register of Historic Places documentation, 1980, Section 8, page 3.

Figure 67: Belle Vista (Library of Congress)

Figure 68: John Ryle House, 1927 (National Register documentation)

Figure 69: John Norwood House, 1877 (Atlas of Passaic County)

The "handsome houses" referred to by Rogers were larger Victorian-style houses erected on the expanding east side of the city along Broadway. The 1877 Atlas Map showing Paterson's eastern Wards illustrated large houses on large lots under the names of James Booth, Thomas and Robert Barbour, several Baldwins, Dr. A. W. Rogers, and Robert Hamil, among others. The map showing Paterson's "3rd and 6th Wards" in the 1877 Atlas illustrates the growing physical separation of the owner/management class from the working class—the Erie Railway serving as a convenient dividing line. The map also clearly indicates the expectation of continued economic and population growth in the coming years, an expectation which would be filled particularly during the 1880s and into the turn of the twentieth century.

In William Nelson's contemporary 1882 publication, *History of Bergan and Passaic Counties,* he reported on the "emigrant train" he saw arriving:

> During the whole summer of 1880 there was an unprecedented increment in the foreign population of Paterson, and it was an interesting sight to see the arrivals every night by the "emigrant train" of quaintly attired new-comers from the Old World, from England, Scotland, Ireland, Holland, France, Germany, Italy, and other countries,—with their quainter luggage, who had come straight

> to Paterson, attracted hither by the enthusiastic reports sent "home" by friends who had come earlier. . . .[80]

Statistics for Paterson in the 1880 US Population Census show that the vast majority of the "foreign-born" population originated from the British Isles (12,470), while a much smaller number (2,267) claimed nativity in Holland, eighty-seven from Italy, twenty-two from Poland, twenty-six from Russia, sixty-seven from Sweden, and 569 claimed birth in Switzerland.[81] Immigrant men reportedly held as much as two-thirds of the skilled silk weaver positions in 1880, while women and children performed the jobs requiring less expertise.[82]

Figure 70: 1877 Atlas Map, Paterson 3rd and 6th Wards (Library of Congress)

Paterson's working population began to diversify even more after 1890 as the numbers of Italian and Eastern European (largely Jewish) immigrants swelled. By the 1910 census, just over twenty-percent of Paterson residents claimed Italian birth and fifteen

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[80] Clayton and Nelson, *History of Bergan and Passaic*, 407.

[81] "1880 Census: Volume 1. Statistics of the Population of the United States" (Washington: Government Printing Office, 1883), Table XVI "Foreign-born Population of Fifty Principle Cities," 540–541, *United States Census Bureau*, www.census.gov/library/publications/1883/dec/vol-01-population.html.

[82] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls*, 4.4.

percent from Russia.[83] Both men and women worked in skilled and unskilled positions and it appears the kind of work they found often correlated with their cultural background. The ATP site study completed by Hunter Research, Inc. made some general observations on the links between ethnicity and occupation in Paterson. Northern Italian men worked as skilled laborers, particularly in dye works, while southern Italian men held unskilled or semi-skilled positions across the textile industry. Italian women tended to have skilled positions and German women worked as skilled weavers and warpers. Irish and Eastern European men and women held unskilled jobs. American, English, and Jewish women worked only until they were married.[84]

540 POPULATION, BY RACE, SEX, AND NATIVITY.

TABLE XVI.—FOREIGN-BORN POPULATION OF FIFTY PRINCIPAL CITIES, DISTRIBUTED,

	Living in—	Gibraltar.	GREAT BRITAIN AND IRELAND.						Greece.	Greenland.	Holland.	Hungary.	India.
			Total.	England.	Ireland.	Scotland.	Wales.	Great Britain (not specified).					
1	New York, N. Y.	33	237,035	39,684	198,595	8,683	929	64	60	7	1,900	4,101	39
2	Philadelphia, Pa.	17	134,823	26,815	101,808	5,806	830	22	14	4	506	103	37
3	Brooklyn, N. Y.	19	104,291	20,294	78,814	4,682	425	46	0		938	81	60
4	Chicago, Ill.	4	64,874	13,046	44,411	6,152	725	44	27	4	2,045	300	14
5	Boston, Mass.	12	76,729	8,998	64,793	2,002	221	55	26		403	23	72
31	Cambridge, Mass.	10	10,226	1,330	8,366	424	35	3		3	83	2	3
32	Syracuse, N. Y.		6,083	1,383	4,451	137	23	2			12	11	
33	Columbus, Ohio		3,761	703	2,314	136	559				40	9	1
34	Paterson, N. J.		12,470	4,894	6,099	1,745	45	2		24	2,207	1	
35	Toledo, Ohio		4,040	889	2,941	180	18	2	1		93	55	1

ACCORDING TO PLACE OF BIRTH, AMONG THE VARIOUS FOREIGN COUNTRIES: 1880—Cont'd.

Italy.	Japan.	Luxemburg.	Malta.	Mexico.	Norway.	Pacific Islands.	Poland.	Portugal.	Russia.	Sandwich Islands.	South America.	Spain.	Sweden.	Switzerland.	Turkey.	West Indies.	Born at sea.	
12,223	20	108	7	133	853	11	9,020	66	4,551	48	427	980	3,194	4,545	77	814	93	1
1,656	11	16	7	49	186	17	577	78	278	39	137	193	613	1,916	33	490	104	2
1,188	1	114	12	38	874	41	501	125	209	16	143	379	2,848	909	31	501	59	3
1,357	2	836	6	24	9,783	20	5,536	34	921	13	41	61	12,939	1,469	14	219	38	4
1,277	4	6	11	5	238	22	437	587	845	27	89	92	1,430	245	17	99	46	5
36	1				43	3	18	113	4	2	3	18	169	37	4	23	5	31
26				2	1		456		32		5	1	6	172		8	7	32
48		1			2		11		7		7	1	14	188	16	3	4	33
87				10			22		28	7	12	6	67	580		4	6	34
17		37		2	6		698	1	17		8	3	50	848	4	23	3	35

Figure 71: 1880 Population census figures for selected cities (see Line 34 for Paterson figures), showing country of origin. (US Census Bureau)

83 "1910 Census: Volume 3. Population, Reports by States, with Statistics for Counties, Cities, and Other Civil Divisions: Nebraska-Wyoming, Alaska, Hawaii, and Porto Pico" (Washington: Government Printing Office, 1913, Reprinted April 1915), Table 12, "Foreign White Stock, by Nationality, for Cities of 100,000 or more," *United States Census Bureau*, https://www.census.gov/library/publications/1913/dec/vol-3-population.html

84 Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls*, 4.8–4.9.

In 1902, a disaster brought the Paterson community together. The "Great Conflagration," later called the Great Fire of 1902, began in the early morning hours of February 3, fanned by a strong northerly wind. Firefighters from across the city and nearby communities fought the fire through much of the day. In the end, twenty-six blocks of Paterson's business and residential districts were destroyed, including twenty-six stores, two newspapers and the Western Union, six office buildings, five "club houses" including the YMCA, six banks, five churches, eight public buildings (including City Hall, the library, and two schools), and an estimated 500 homes and apartments. Remarkably none of the mills or factories were damaged. However, newspaper reports placed the number of homeless at over 1,000 families, many of them "well-to-do." On the afternoon of the fire, Mayor John Hinchliffe was quoted saying, "I am deeply grateful to the men who so promptly came to our assistance… and were it not for their quick arrival and subsequent heroic work, I am afraid that the city of Paterson would by this time have been a desolate black spot."[85] The city was saved, and though many lost their employment in the local business community, the Paterson factories continued their work.

By 1920, the flood of immigration into the city had slowed. Between 1910 and 1920, the total population of Paterson grew by approximately 10,000, compared to around 20,000 over each of the three previous decades.[86]

Table 31. New Jersey - Race and Hispanic Origin for Selected Large Cities and Other Places: Earliest Census to 1990

(See text for sources, definitions, and explanations)

Census year (national rank through 100, state rank through 3) [1]	Total population		Race										Hispanic origin (of any race)		White, not of Hispanic origin	
			White		Black		American Indian, Eskimo, and Aleut		Asian and Pacific Islander		Other race					
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Paterson																
1990 (-, 3)	140 891	100.0	57 977	41.2	50 729	36.0	436	0.3	2 024	1.4	29 725	21.1	57 711	41.0	34 571	24.5
Sample	140 891	100.0	58 052	41.2	50 799	36.1	430	0.3	1 913	1.4	29 697	21.1	57 050	40.5	35 368	25.1
1980 (-, 3)	137 970	100.0	70 203	50.9	47 091	34.1	205	0.1	709	0.5	19 762	14.3	39 650	28.7	50 001	36.2
Sample	137 970	100.0	71 509	51.8	47 114	34.1	221	0.2	704	0.5	18 422	13.4	39 551	28.7	51 156	37.1
1970 (95, 3)	144 824	100.0	103 777	71.7	38 919	26.9	192	0.1	282	0.2	1 654	1.1	(NA)	(NA)	(NA)	(NA)
15% sample	144 835	100.0	105 006	72.5	38 815	26.8			1 014	0.7			18 068	12.5	*87 994*	*60.8*
5% sample	(NA)	100.0	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	19 359	13.4	(NA)	(NA)
1960 (86, 3)	143 663	100.0	122 310	85.1	21 138	14.7	67	-	110	0.1	38	-	(NA)	(NA)	(NA)	(NA)
1950 (66, 3)	139 336	100.0	130 927	94.0	8 270	5.9	32	-	68	-	39	-	(NA)	(NA)	(NA)	(NA)
1940 (64, 3)	139 656	100.0	135 300	96.9	4 268	3.1	5	-	83	0.1	(X)	(X)	(NA)	(NA)	(NA)	(NA)
1930 (60, 3)	138 513	100.0	135 427	97.8	2 952	2.1	1	-	133	0.1	(X)	(X)	(NA)	(NA)	(NA)	(NA)
"Mexican" in Other race	138 513	100.0	135 424	97.8	2 952	2.1	1	-	133	0.1	3	-	(NA)	(NA)	(NA)	(NA)
1920 (49, 3)	135 875	100.0	134 254	98.8	1 551	1.1	2	-	68	0.1	(X)	(X)	(NA)	(NA)	(NA)	(NA)
1910 (40, 3)	125 600	100.0	123 969	98.7	1 539	1.2	1	-	91	0.1	(X)	(X)	(NA)	(NA)	(NA)	(NA)
1900 (32, 3)	105 171	100.0	103 859	98.8	1 182	1.1	-	-	130	0.1	(X)	(X)	(NA)	(NA)	(NA)	(NA)
1890 (36, 3)	78 347	100.0	77 644	99.1	641	0.8	-	-	62	0.1	(X)	(X)	(NA)	(NA)	(NA)	(NA)
1880 (34, 3)	51 031	100.0	50 339	98.6	670	1.3	6	-	16	-			Black			
1870 (37, 3)	33 579	100.0	33 218	98.9	361	1.1	-	-	-	-	Total		Free		Slave	
1860 (46, 3)	19 586	100.0	19 258	98.3	328	1.7	-	-	-	-	328	100.0	328	100.0	-	-
1850 (60, 2)	11 334	100.0	11 121	98.1	213	1.9	(NA)	(NA)	(NA)	(NA)	213	100.0	210	98.6	3	1.4
1840 (53, 2)	7 596	100.0	7 406	97.5	190	2.5	(NA)	(NA)	(NA)	(NA)	190	100.0	182	95.8	8	4.2

Figure 72: Population Census for Paterson, showing population changes from 1840 to 1990 (US Census Bureau)

[85] "Paterson Swept by a Conflagration," *Wilkes-Barre Record*, February 10, 1902, https://www.newspapers.com/clip/21767154/1902_great_fire_of_paterson.

[86] "Historical Census Population Totals, 1790–1990."

Labor Unrest—
The Paterson Silk Strikes of 1911 and 1913

The divide between the silk mill and dye house owners, as well as other manufacturers, and the workers who populated their factories seemed to grow wider with each decade, particularly after 1890. This was not limited to just Paterson shops, as discontent among industrial laborers existed across the US as well as industrialized European nations. Paterson, however, found itself at the center of one of the largest silk industry strikes of the early twentieth century. Known simply as "The Paterson Silk Strike of 1913," this infamous labor walkout had its origins in a smaller strike in November 1911. Both strikes began with the weavers at the Doherty Silk Company mill.

Paterson was no stranger to labor actions, beginning as early as 1824.[87] In 1828, Sam Patch and his fellow boss spinners and weavers staged a walkout over a change in the lunch hour. In 1835, child laborers in Paterson walked off the job in a fight to reduce the thirteen-hour workday. That strike lasted two months and involved as many as 2,000 children and sympathizers. An investigative committee was sent from Newark, New Jersey, which concluded that Paterson's cotton mills were "more congenial" to autocratic Russia than to the American "land of the free and home of the brave."[88] Similar strikes were occurring throughout this period in other American industrial cities such as Pawtucket, Lowell, New York, Philadelphia, and the growing midwestern industrial city of Chicago.

Long workdays continued to be a contentious labor issue throughout the United States into the 1880s and beyond. Increasing immigration altered labor's bargaining power and infused European anarchism and socialist ideals into the unrest. The Knights of Labor (KOL) and the Federation of Organized Trades and Labor Unions (FOTLU) took up the call for improved working conditions by organizing local labor actions. The FOTLU was the more radical of the two organizations, its best-known action being the May 1, 1886, national general strike for the eight hour day. The May 4 Haymarket massacre (also known as the Haymarket affair or riot) which followed in Chicago marked a dramatic escalation of violence in US strike actions. In November 1886, Samuel Gompers' efforts to unify the existing trade unions under a national umbrella organization resulted in the formation of the American Federation of Labor (AFL), an amalgamation of FOTLU, some KOL affiliates, and other regional unions, becoming the dominant national labor union in the US. Their response to the growing violence, according to labor historians David Roediger and Philip Foner, was to scale back their actions.[89] There were others, however, like Bill

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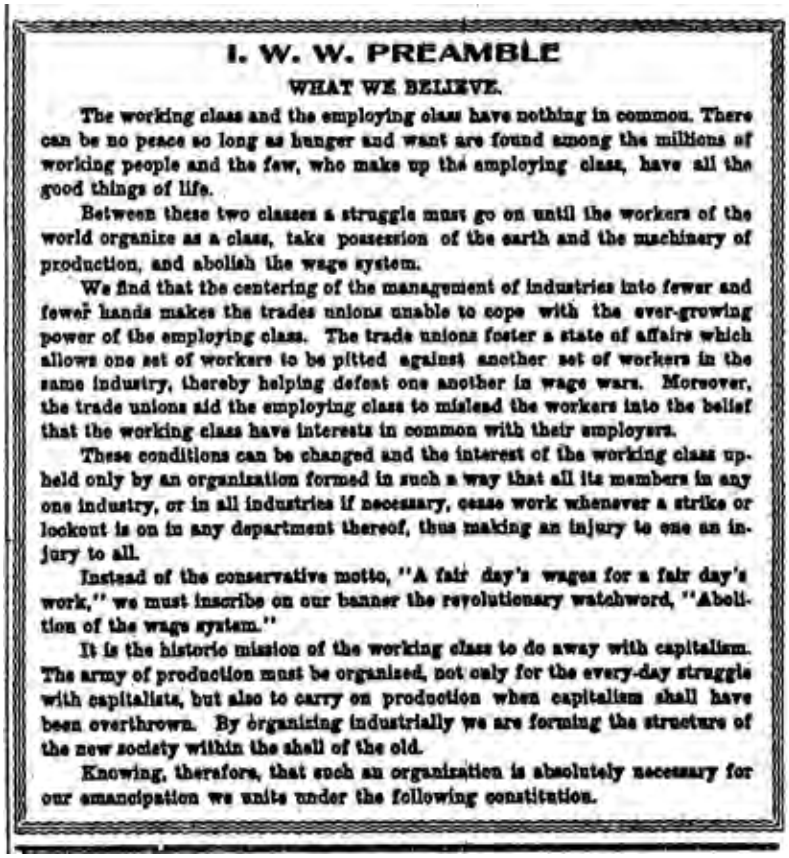
[87] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 4.3.

[88] David R. Roediger and Philip Sheldon Foner, *Our Own Time: A History of American Labor and the Working Day* (New York: Verso, 1989), 35.

[89] Roediger and Foner, *Our Own Time,* 125–145.

Haywood, a founding member of the International Workers of the World (IWW or "Wobblies"), whose commitment to anarchism reportedly deepened after the Haymarket massacre.[90]



I. W. W. PREAMBLE

WHAT WE BELIEVE.

The working class and the employing class have nothing in common. There can be no peace so long as hunger and want are found among the millions of working people and the few, who make up the employing class, have all the good things of life.

Between these two classes a struggle must go on until the workers of the world organize as a class, take possession of the earth and the machinery of production, and abolish the wage system.

We find that the centering of the management of industries into fewer and fewer hands makes the trades unions unable to cope with the ever-growing power of the employing class. The trade unions foster a state of affairs which allows one set of workers to be pitted against another set of workers in the same industry, thereby helping defeat one another in wage wars. Moreover, the trade unions aid the employing class to mislead the workers into the belief that the working class have interests in common with their employers.

These conditions can be changed and the interest of the working class upheld only by an organization formed in such a way that all its members in any one industry, or in all industries if necessary, cease work whenever a strike or lockout is on in any department thereof, thus making an injury to one an injury to all.

Instead of the conservative motto, "A fair day's wages for a fair day's work," we must inscribe on our banner the revolutionary watchword, "Abolition of the wage system."

It is the historic mission of the working class to do away with capitalism. The army of production must be organized, not only for the every-day struggle with capitalists, but also to carry on production when capitalism shall have been overthrown. By organizing industrially we are forming the structure of the new society within the shell of the old.

Knowing, therefore, that such an organization is absolutely necessary for our emancipation we unite under the following constitution.

Figure 73: Preamble to IWW Constitution (Industrial Worker, Dec. 7, 1911)

It was within this atmosphere of the growing economic, ethnic, and political divide between labor and management that the silk workers of one Paterson mill reached their breaking point in the waning months of 1911. The year 1911–1912 (year ending October 30, 1912) was a record year for strikes in New Jersey, according to the New Jersey Bureau of Statistics of Labor and Industry. In those months alone, ninety-seven strikes occurred "resulting in loss of time and wages," an increase of thirty-one percent over the previous year. The Bureau's 1912 report placed the blame for the increase squarely on "the avowedly revolutionary organization known as the 'Industrial Workers of the World'" (IWW). The report noted that "approximately 90 per cent, of the workmen and operatives involved in

[90] Paul Avrich, *The Haymarket Tragedy* (Princeton, NJ: Princeton University Press, 1984), 434.

these strikes were foreigners of the non-English speaking races. . .” [91] Though the Bureau clearly viewed the members of the IWW as trouble-makers, factory workers in Paterson saw the IWW as an opportunity to improve their working conditions.

In December 1911, the weavers in the Doherty Mill in Paterson determined to organize under the IWW banner, a radical shift from the less confrontational AFL and the traditional craft unions, in an attempt to improve working conditions in the mill. The February 1912 headline in the *Industrial Union News,* published by the Detroit IWW, applauded the Doherty weavers’ action: “INSPIRING ACTION OF SILK WEAVERS—Local of United Textile Workers Dump Fakirs Overboard and Organize IWW Local.”[92] The *Union News* reported the details of the strike, in which two hundred weavers in the Doherty Mill walked out over management’s plan to change to the “four-loom system”:

> A four-loom system means that one weaver shall operate four looms, whereas two looms and no more have heretofore always been considered sufficient for one weaver. But the pockets of the silk capitalists cried for greater profits and the Doherty company attempted to double the number of looms upon each weaver without even increasing the wages to any appreciable extent. The wage of a four-loom weaver was set by the firm at only $15.40 per week, although a weaver can earn about $13 or $14 a week on two looms, figuring on a piece work basis.
>
> But it is not the wages that the striking weavers are complaining about—they do not want a four-loom system at all, realizing that the physical and mental strain on the workers would be terrific, and realizing, also, that with one weaver doing the work of two, 50 percent of the weavers would be thrown out of employment (if not immediately, within a very short time) and brought into competition with the 50 percent happening to have jobs.
>
> The argument of the firm was and is that without driving the weavers faster than ever and squeezing additional profits out of them, the firm could not exist owing to the competition going on throughout the silk industry. Pennsylvania was especially pointed out as the field from which the fiercest competition emanated.[93]

The strike lasted more than three months, expanding through sympathy strikes to include as many as 5,000. The IWW urged workers to participate in the strike, according to the

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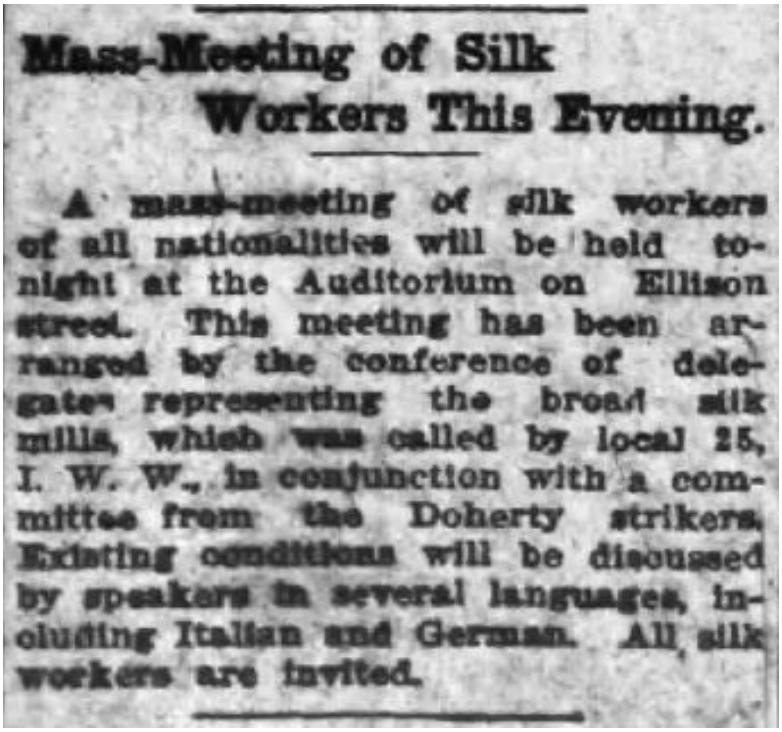
[91] “Thirty-fifth Annual Report of the Bureau of Statistics of Labor and Industries of New Jersey, for the Year Ending October 30, 1912” (Camden: Sinnickson Chew & Sons Co., 1913), 227, “Bureau of Statistics of Labor and Industries Reports, 1878–1917,” *New Jersey State Library*, https://www.njstatelib.org/wp-content/uploads/slic_files/imported/NJ_Information/Digital_Collections/Bureau_Statistics/Statistics1912.pdf.

[92] As cited in Daniel De Leon, “Paterson, NJ silk workers’ strikes (1911–1912),” *The People* 111, no. 11 (February 2002), *Articles Reprinted from The People,* www.deleonism.org/text/02020003.htm.

[93] *Industrial Union News,* as cited in De Leon, “Paterson, NJ silk workers’ strikes (1911–1912).” The Bureau of Statistics report on the strike noted 500 weavers at Doherty Mills initiated the walkout (“Thirty-fifth Annual Report of the Bureau of Statistics,” 229).

Bureau of Statistics report, "and within a few weeks after the strike began in the Doherty Mills, a majority of the employees of practically all the silk firms in Paterson and vicinity were enrolled in the new organization [the IWW]."[94] The strike ended in March 1912, considered a success with negotiated agreements. However, the agreements proved to be tenuous and short-lived.



Mass-Meeting of Silk Workers This Evening.

A mass-meeting of silk workers of all nationalities will be held tonight at the Auditorium on Ellison street. This meeting has been arranged by the conference of delegates representing the broad silk mills, which was called by local 25, I. W. W., in conjunction with a committee from the Doherty strikers. Existing conditions will be discussed by speakers in several languages, including Italian and German. All silk workers are invited.

Figure 74: *The Morning Call*, "Mass-meeting of Silk Workers This Evening," February 16, 1912. (fultonhistory.com)

Less than one year later, in January 1913, the weavers at Doherty Mills again walked out over a renewed plan by management to adopt the four-loom system. In his 2002 article analysis of the earlier strike, Daniel De Leon claimed that through 1912, members of the "Chicago-based anarchist IWW" aided the mill owners in identifying and blackballing the socialist "Detroit IWW men" of Local 25 who led the 1911 strike. These actions undermined the agreements made between the union and mill owners and left the labor landscape open for action under Chicago IWW leadership.[95] Among those leaders who came to Paterson early in 1913 was Bill Haywood and his associates Carlo Tresca, Elizabeth Gurley Flynn, and Patrick Quinlan. As Quinlan wrote in March 1913, "Paterson feels that in order

[94] "Thirty-fifth Annual Report of the Bureau of Statistics," 229.

[95] De Leon, "Paterson, NJ silk workers' strikes (1911–1912)."

to be safe he [the worker] must go to the industrial union and, fortunately, this time there is no doubt as to who, which, and what only the one union—the IWW of Chicago."[96]

On February 24, the leadership hosted a mass meeting for Paterson laborers, out of which came a vote for a general strike. The purpose of the strike then extended far beyond the grievances of the Doherty weavers, addressing the eight hour workday and increases in wages as well. By the end of March as many as 20,000 workers in Paterson were on strike, according to the 1913 Bureau of Statistics report. The Bureau report, however, opined that the strikers were "under the influence of a steadily maintained agitation in the form of Sunday mass meetings, bands of strikers parading through the mill district during working hours, with other measures of a more or less coercive character."[97] Most of the mills were closed, continued the report, "as the best means of affording protection to their faithful workmen," who picketers reportedly treated with insults and in some cases, "actual personal violence."[98] Quinlan estimated "about 25,000 out on strike," and in contrast to the Bureau of Statistics' official description of the strike, Quinlan noted that "not a man, woman, nor child was coerced, the capitalists' press misrepresentations, calumny, and slander to the contrary."[99]

It is said that the most remarkable thing about the Paterson Silk Strike of 1913 was the steadfast unity of both the laborers and the mill owners alike. With neither willing to budge on their demands, the strike dragged on for six months. Strikers marched and picketed in front of the mills while the mill owners enlisted the police and private detectives to break up the crowds. At times it became violent, including the death of Valentino Modestino, reportedly standing on his porch with a child in his arms when he was killed by a detective's stray bullet.[100] Police closed the workers meeting halls, so in May mass meetings were held in nearby Haledon in front of the home of Pietro and Maria Botto.[101]

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[96] Patrick L. Quinlan, "The Paterson Strike," *Solidarity* [New Castle, PA] 4, no. 12, whole no. 168 (March 15, 1913): 1 https://archive.org/details/ThePatersonStrike1913/page/n1.

[97] "Thirty-sixth Annual Report of the Bureau of Statistics of Labor and Industries of New Jersey, for the Year Ending October 30, 1913" (Paterson: News Printing Co., 1914), 179, "Bureau of Statistics of Labor and Industries Reports, 1878-1917," https://www.njstatelib.org/wp-content/uploads/slic_files/imported/NJ_Information/Digital_Collections/Bureau_Statistics/Statistics1913.pdf.

[98] "Thirty-sixth Annual Report of the Bureau of Statistics," 179.

[99] Quilan, "The Paterson Strike," 1.

[100] "Program of the Paterson Strike Pageant," in Brooks McNamara, ed., "Paterson Strike Pageant," *The Drama Review: TDR* 15, no. 3 (Summer, 1971), www.jstor.org/stable/1144681.

[101] The Pietro and Maria Botto House is a designated National Historic Landmark and operates as the American Labor Museum, https://labormuseum.net.

Figure 75: Bill Haywood in Paterson, 1913 (Library of Congress)

Journalist John Reed, who conceptualized the Paterson Strike Pageant, gathered strike information from the county jail cell where he and about forty strikers, including Bill Haywood and Pat Quinlan, were held on various charges. Reed described the jail scene in a June 1913 article in the journal *The Masses:*

> Some had been lined up against a wall, as they marched to and fro in from of the mills, and herded to jail on the charge of "unlawful assemblage!" Others had been clubbed into the patrol-wagon on the charge of "rioting," as they stood at the track, waiting for a train to pass! They were being held for the Grand Jury that indicted Haywood and Gurley Flynn. *Four of these jurymen were silk manufacturers, another the head of the local Edison company—which Haywood tried to organize for a strike—and not one a workingman!*[102]

Most of the men held in the jail were Italian immigrants; others were Dutch, Belgian, Jewish, Slovak, German, Polish, even "one Frenchman and one 'free-born' Englishman." None of the men were "Americans," who, Reed was told, liked to talk, but did not like to fight.[103]

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[102] John Reed, "War in Paterson," *The Masses* 4, no. 9 (1913): 16, *Modernist Journals Project*, Brown Digital Repository, https://repository.library.brown.edu/studio/item/bdr:527236. Emphasis his.

[103] Reed, "War in Paterson," 16.

Figure 76: Valentino Modestino (American Labor Museum)

Figure 77: Mass-meeting at the Botto House (Wayne State University, Reuther Library, photo ID 5165)

John Reed's Paterson Strike Pageant, held at Madison Square Garden in New York City with a cast of 1,200 actual strike participants, was intended to raise money for the strikers. Though the performance was well attended and hailed for its artistic quality, the event brought only $150 to the Paterson laborers.[104] Some, including Elizabeth Gurley Flynn, believed the failure of the pageant broke the will of the strikers as they and their families suffered with no relief provided by the IWW.[105] On August 1, 1913, the strike ended, having achieved none of the workers' demands.

Figure 78: Iconic Paterson Silk Strike Pageant poster (Wikimedia Commons)

[104] McNamara, "Paterson Strike Pageant."

[105] Elizabeth Gurley Flynn, "The Truth About the Paterson Strike," in McNamara, "Paterson Strike Pageant," 70.

Conclusion

The end of the 1913 Paterson Silk Strike did not spell the end of labor actions in Paterson. In fact, in 1916, workers threatened another general strike forcing management to agree to a nine-hour workday. However, Paterson industry never really recovered from the 1913 Silk Strike. Workers went back to work—those with jobs to return to—and often received lower pay than before the strike. Many were laid off or had been replaced. Some plants removed themselves from Paterson altogether. By 1915, the Doherty Mill was occupied by four tenant operations. The silk industry in Paterson would never return to its 1890s glory days.

The country was gearing up for the war in Europe, soon to be known as the Great War or the War to End All Wars (and eventually World War I), and industry shifted its attention to the war effort, which proved to be good for business. Paterson manufacturers would benefit from the war economy, but struggled in its aftermath. Workers lost jobs and bargaining power as well, as the revolution in Russia, moved by Marxist ideology, caused a backlash in the United States against the radical unionists.[106]

[106] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls*, 4.12.

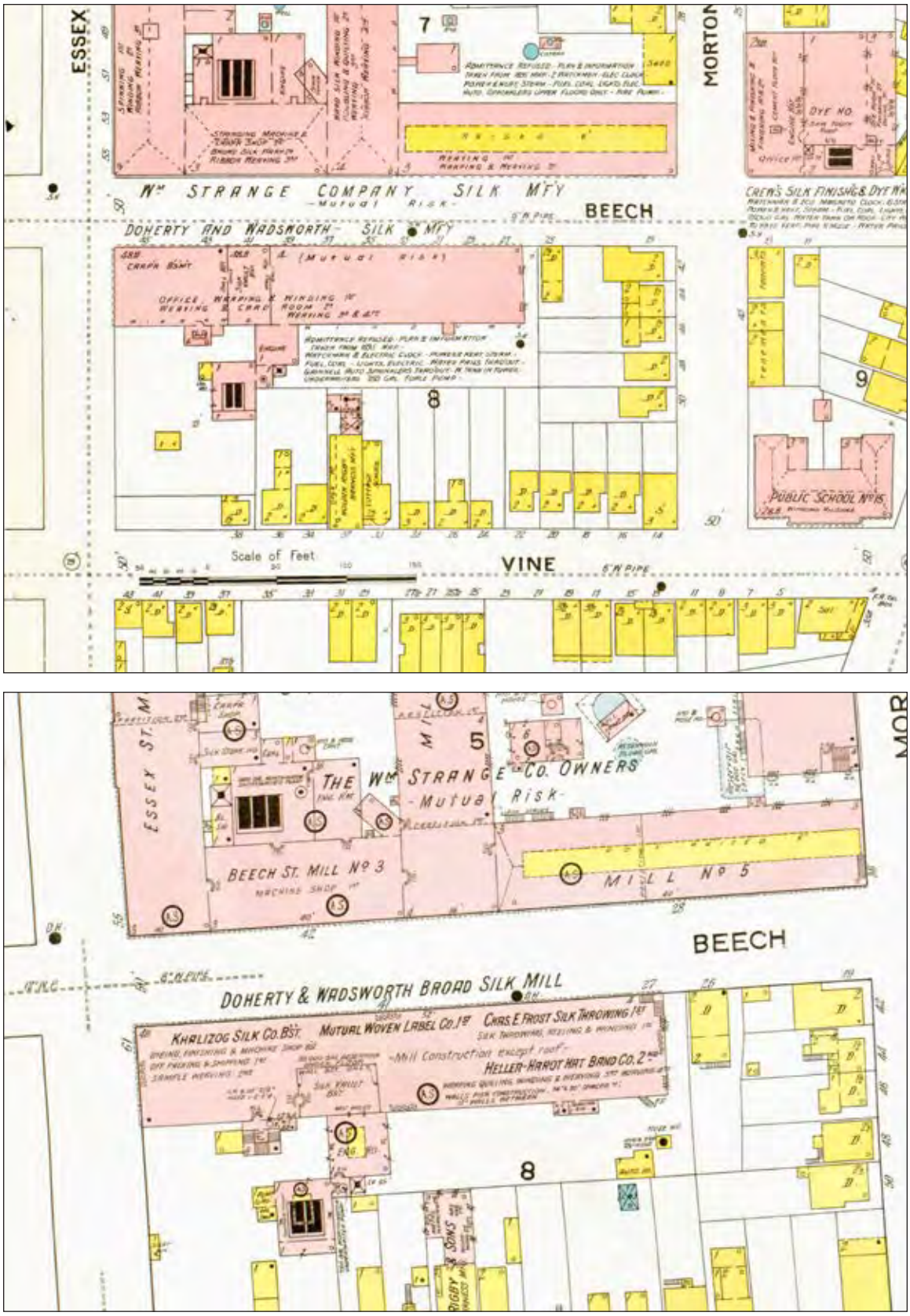

Figure 79: 1899 and 1915 Sanborn maps showing the Doherty Mill (Princeton Archives)

CHAPTER 6

Changing Paterson: Migrations, Depression, and War

> . . . look away north by east where the church spires still spend their wits against the sky to the ball-park in the hollow with its minute figures running—beyond the gap where the river plunges into the narrow gorge, unseen. . .
>
> *Paterson*
> William Carlos Williams[1]

Introduction

Though the Paterson silk industry and its workforce shrank after 1913, as manufacturers shifted more production to lower-cost Pennsylvania plants, industry remained key to the city's economy. At the same time, the "Great Migration" of African Americans streamed from the southern states, heading for the industrial cities of the Northeast and Midwest. A brief reprieve for Paterson's manufacturing community came at the cost of war—a war in Europe thought to be the "war to end all wars." That proved not to be the case as war again loomed by the end of the 1930s. Though Paterson industry benefited from increased production during both World War I and World War II, in between the wars a cycle of economic depression and recovery ensued, followed by a depression so devastating it will be forever known as "The Great Depression." In Paterson, construction of a municipal stadium helped a Depression-stricken workforce—and segregated African Americans—find moments of pleasure during a time of hardship. With the conclusion of the Second World War in 1945, the S.U.M. also came to an end as the corporation sold its assets to the City of Paterson. By then, decades of innovation and labor turmoil had changed the industrial landscape of Paterson forever.

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[1] William Carlos Williams, *Paterson* (New York: Penguin Books, 1983), 55, https://archive.org/details/PatersonWCW.

Paterson's Changing Population—African Americans

From its establishment in 1792, Paterson likely had a small African American population, both enslaved and free. After New York's abolition of slavery in 1799, New Jersey followed in 1804 with legislation providing *gradual* emancipation of enslaved African Americans. It was the last northern state to do so.[2] By 1820, the population of Acquackanonk Township, including the unincorporated town of Paterson, numbered 153 enslaved men, women, and children, and 191 "free colored persons."[3] Rev. Samuel Fisher counted 165 "Coloured Persons" living in Paterson in 1824–25. His detailed census dated June 1824 listed just two black households, "Susan black woman," and "Toby black man," both of which included both black and white occupants. All the remaining 150 or so black Paterson residents lived in white households, their status as servant or enslaved person unknown, including five in the Reverend Fisher's home, six at Colonel Abraham Godwin's "hotel," and one in the home of Peter Colt.[4] Fifteen years later, according to the 1840 US census, 190 African Americans lived in Paterson, eight of whom were still enslaved. At that time, African Americans represented just two-and-a-half percent of the Paterson population. Though the number of African Americans living in Paterson continued to increase, their percentage within the total population fell over the next five decades as European immigrants increased at a much greater rate through the 1890s.[5]

The US Population Census for Paterson taken in the years 1910 and 1920 showed a changing pattern of population growth as the number of whites (European immigrant and American-born) began to level off, while blacks (African American) increased (see Figure 72). Two factors were involved, one the growing anti-immigrant feeling among Americans resulting from the war in Europe, which slowed immigration. The other was an internal migration of African Americans from the southern states where Jim Crow laws and racial violence severely limited their ability to live and work.

The migration began slowly after the failure of Reconstruction in the South, as black families left the growing violence and unemployment for the promise of work in northern cities. The first dramatic wave of what became known as the "Great Migration"

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[2] L. A. Greene, "A History of African Americans in New Jersey," *Journal of the Rutgers University Libraries* LVI, no. 1 (June 1994): 19.

[3] *Census for 1820* (Washington: Gales & Seaton, 1821), 67, "Census for 1820," *United States Census Bureau*, www.census.gov/library/publications/1821/dec/1820a.html.

[4] Rev. Samuel Fisher, "Statistical Account…July 4th, 1824 to July 4th 1825," and "June 1824," Census of Paterson, NJ manuscript collection, Paterson Museum, Paterson, NJ.

[5] Campbell Gibson and Kay Jung, "Historical Census Statistics on Population Totals By Race, 1790 to 1990, and by Hispanic Origin, 1970 to 1990, For Large Cities and Other Urban Places in the United States," Population Division, Working Paper No. 76, US Census Bureau, Washington, D.C., February 2005, www.census.gov/population/www/techpap.html. Due to fires, the 1840 census is the first detailed census record available for Paterson, New Jersey.

occurred around 1915, the remarkable movement of people revealed in the census records. The African American population of New York City grew from 91,000 in 1910 to over 152,000 in 1920; Detroit's black population rose by 30,000 over the same decade.[6]

In New Jersey similar exponential growth began somewhat earlier—in Camden, the African American population more than quadrupled between 1870 and 1880, nearly doubled in Trenton between 1880 and 1890, and in Paterson rose from 641 African Americans in 1890 to 1,182 in 1900. When the 1915 migration wave hit Paterson, the black population nearly doubled again from just over 1,500 in 1910 to more than 2,900 African Americans by 1920.[7] It is not clear why these New Jersey cities attracted the early migrants, Camden perhaps because of its proximity to Philadelphia. Northern New Jersey may have been attractive earlier because those counties began to reverse a trend toward segregated schools in the 1870s. In 1881, integrated public schools became New Jersey state law, though compliance in the southern counties was problematic.[8]

African Americans, typically relegated to domestic and agricultural jobs, played a larger role in the industrial workforce after 1914 as international events brought the United States closer to war in Europe and temporarily stemmed the tide of immigration. In New Jersey, according Seton Hall University history professor, L. A. Greene, the "proportion of blacks in domestic and personal service occupations declined from 55.1 percent in 1910 to 43.3 percent by 1930, while the percentage of blacks in manufacturing and mechanical industries increased from 18.9 percent to 29.7 percent between 1910 and 1930."[9] African American women, like many American women, played a significant role in keeping industry moving during the war.

World War I and Paterson Industry

Before the United States' April 1917 entry into the Great War in Europe (later called World War I), the United States remained neutral and continued to carry on international trade. While Great Britain, France, and Russia sunk more deeply into war with Germany and Austria, American textile, iron, and munitions manufacturers benefited from the sales of wartime supplies. German submarine attacks tested US neutrality, however, by first sinking the passenger ship *Lusitania* in 1915, with over one hundred Americans onboard, and later attacks on merchant ships. On July 30, 1916, an explosion of munitions stockpiled

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6 Gibson and Jung, "Historical Census Statistics," Table 33 (New York) and Table 23 (Michigan), "Race and Hispanic Origin for Selected Large Cities and Other Places: Earliest Census to 1990."

7 Gibson and Jung, "Historical Census Statistics on Population Totals By Race, 1790 to 1990."

8 Greene, "A History of African Americans in New Jersey," 34. See also Bernard K. Freamon, "The Origins of the Anti-Segregation Clause in the New Jersey Constitution Sixteenth Annual Issue on State Constitutional Law," *Rutgers Law Journal* 35, no. 1 (2003–2004).

9 Greene, "A History of African Americans in New Jersey," 43.

on Jersey City's Black Tom Island depot rocked the New York Harbor. The American-made munitions were destined for Britain and France—their destruction was deemed sabotage by German operatives.[10] By the end of March 1917, President Woodrow Wilson stood before Congress to request a declaration of war against Germany and its Austrian ally. Congress complied.

United States' involvement in the Great War lasted little more than a year as the war concluded in November 1918. Its impact on American industry, however, began much earlier in 1914, as the Allied Powers (Britain, France, and Russia) sought military supplies from the United States. This was a dramatic reversal from the post-Revolution period, in which Alexander Hamilton's *Report on Manufactures* identified US dependence on foreign-made military supplies as a particular problem. Exports from the United States to Europe increased by nearly 2.5 billion dollars between 1913 and 1917, which gave rise to a similar increase in the US labor force—from forty million in 1916 to forty-four million in 1918.[11]

Figure 80: ALCO WDLR locomotive at the Ffestiniog Railway 1995 gala. (Photo by Dan Crow. Creative Commons)

American industry in general, by the second decade of the twentieth century, had begun to expand beyond the confines of the old industrial city centers built on waterpower. Paterson factories were small in comparison and their production capabilities too limited

[10] "Domestic Sabotage: The Explosion at Black Tom Island," *National Park Service*, www.nps.gov/articles/black-tom-wwi.htm.

[11] Hugh Rockoff, "US Economy in World War I," *EH.net*, http://eh.net/encyclopedia/u-s-economy-in-world-war-i.

to fill the enormous military supply requirements. Several New Jersey machine companies were called into service during the US Navy's fleet buildup in 1917. These included Babcock & Wilcox Co., of Bayonne, N. J., which made ship boilers, and "the De Laval Steam Turbine Co.'s works at Trenton, N. J., where gears were cut for all the Cramp destroyers and for the first 10 assigned the New York Shipbuilding Corporation."[12] The Navy's 1922 report on the Bureau of Engineering noted that only "some of the firms that contributed to the completion of the major portions of the work on the destroyers" were identified in the narrative. "To mention all," the report continued, "would be to mention many of the large as well as a large number of the small manufacturers of this country."[13] It seems likely at least one of the machine shops of Paterson would have played a part in this effort as one of the "small manufacturers." The American Locomotive Company (ALCO), by then a large conglomerate which included both the Cooke and Rogers Locomotive Works, built narrow gauge steam locomotives for the War Department Light Railways (WDLR) bound for service behind the trenches, though it is not known if any of that work occurred in the Paterson shops.[14]

Even Paterson's silk industry, struggling to find stability amid repeated labor actions, improved during the war effort:

> One does not associate silks with the grim business of war, yet it was demonstrated immediately upon our entrance into the war that there were many ways in which the silk industry was of prime importance in conducting a war.
>
> . . . While our big guns could not be fired without silk to make their cartridge bags, it also developed that there were many other purposes for which silk was necessary in war; parachutes for various kinds of flares, parachutes for airplanes and balloons, balloon cloths and airplane cloths.[15]

The Curtiss Aeroplane and Motor Company of Ohio, which later merged with Wright Aeronautical Corporation in Paterson, produced thousands of the silk-winged Jenny biplanes, most of them the JN-4D trainers.[16] Jane Wallerstein, chronicler of Paterson's Jewish silk workers, noted that some of the men and women who had moved out of

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[12] *History of the Bureau of Engineering Navy Department during the World War* (Washington: Government Printing Office, 1922), 27-28, accessed 6/27/2019, www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/h/history-bureau-engineering-during-wwi.html.

[13] *History of the Bureau of Engineering,* 30.

[14] "Locomotives," *War Department of Light Railways,* accessed 8/21/2019, http://www.wdlr.org.uk/wdlr.

[15] "Tariff Brief of the Silk Association of America Presented to the Ways and Means Committee at the Hearing of February 3, 1921," *Silk*, Vol. XIV, January-December 1921, 68, accessed 6/27/2019, https://books.google.com.

[16] Jim Winchester, ed., *The Aviation Factfile: Biplanes, Triplanes and Seaplanes* (London: Grange Books plc, 2004), 88. The Wright Aeronautical Company, which moved to Paterson in 1919, licensed the design for the engine that powered the Curtiss-built JN-6H airplane, the last of the "Jenny" series, used by the US Navy beginning in 1918.

Paterson because of the recurring strikes returned during the wartime expansion to open their own shops: "The same weavers who had recently cheered denunciations of capitalist oppression and 'the bosses' were now eagerly becoming bosses themselves."[17]

Figure 81: British Kite Balloon (Library of Congress)

Paterson's Changing Industrial Landscape through the 1920s

The economic high brought on by the war economy ended as quickly as it began. After the armistice of November 11, 1918, which ended the war, military supply orders stopped and American factories quickly reduced production. Wages fell as well and many workers were laid off. In Paterson, silk mills and machine shops continued their migration to Pennsylvania and southern states where cheaper land and labor could increase company

[17] Jane Wallerstein, "Voices from the Paterson Silk Mills" (Excerpts printed with permission from Arcadia Publishing, an imprint of Tempus Publishing, Inc., Charleston, SC), "Publications," *Paterson Friends of the Great Falls*, accessed 6/27/2019, http://patersongreatfalls.org/publications.html.

profits. According to one source, "By the summer of 1922, Paterson had lost one-third of its mills to Pennsylvania and 40 percent of its silk workers were unemployed."[18]

The post-war recession was relatively brief and for much of the 1920s the American economy thrived on industry innovations which in many cases grew out of the war effort. The 1920s heralded the age of automobiles, airplanes, and artificial silk. The 1920 US Population Census revealed that the United States had become an urban nation with more than fifty percent of the population living in urban areas, defined as "cities and incorporated places" with a population of 2,500 or above.[19] Many of the smaller "cities" were actually quite rural, areas attractive to industry for the lower land and labor costs. The urban category also included the burgeoning cities like Chicago, where railroads and meat processing were the dominant industries, and Detroit, where the relatively new automobile industry dominated. Both cities attracted African American migrants from the South and immigrants from across the ocean. The largest American city was New York City, the heart of the nation's financial system–a system established by Alexander Hamilton–and the home of the "Garment District" where fashion trends were born and broadcast to influence American and European consumers.

The City of Paterson in 1920 had a population of over 135,000, and though its growth was slowing, it still provided a fertile ground for innovative industry. In 1920, Wright Aeronautical Company moved to Paterson from New Brunswick. The company was the direct descendant of the Wright Company, established by Wilbur and Orville Wright in 1909.[20] After Wilbur Wright's death in 1912, Orville Wright took over the company and in 1916 formed a partnership with Glenn L. Martin. The Wright-Martin Aircraft Corporation produced more than 5,000 airplane engines during World War I (the Great War), particularly the Hispano-Suiza (Hisso) engine used in the later Curtiss Jennys. After the war, the Wright-Martin partnership ended and in 1919, the Wright Aeronautical Company was formed and moved its operations to Paterson.[21] The company reportedly chose Paterson because of the availability of skilled mechanics left unemployed by the shuttered machine shops.[22]

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[18] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 4.14.

[19] Carl Abbott, *Urban America in the Modern Age* (Arlington Heights, IL: Harlan Davidson, Inc., 1987), 2.

[20] Patrick Harshbarger, "Wright Aeronautical Co.," ID #480898480, page 7, *Intensive-Level Survey of Paterson Industrial Mills,* New Jersey Department of Environmental Protection, Historic Preservation Office, 2012, *City of Paterson New Jersey*, www.patersonnj.gov/department/division.php?structureid=68.

[21] Judy Rumerman, "Wright Aeronautical Company," *US Centennial of Flight,* www.centennialofflight.net/essay/Aerospace/Wright_Aero/Aero8.htm.

[22] Harshbarger, "Wright Aeronautical Co.," ID #480898480, page 7.

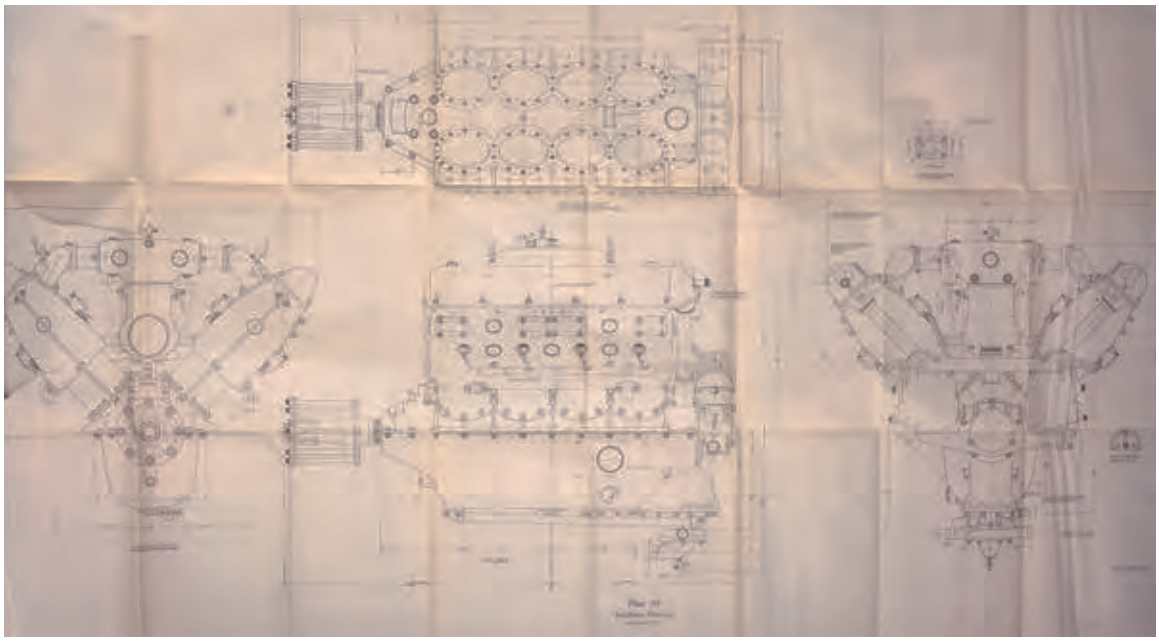

Figure 82 Blueprint of Wright-Martin 6H Hispano-Suiza engine, built in New Brunswick, NJ, 1918 (Library of Congress)

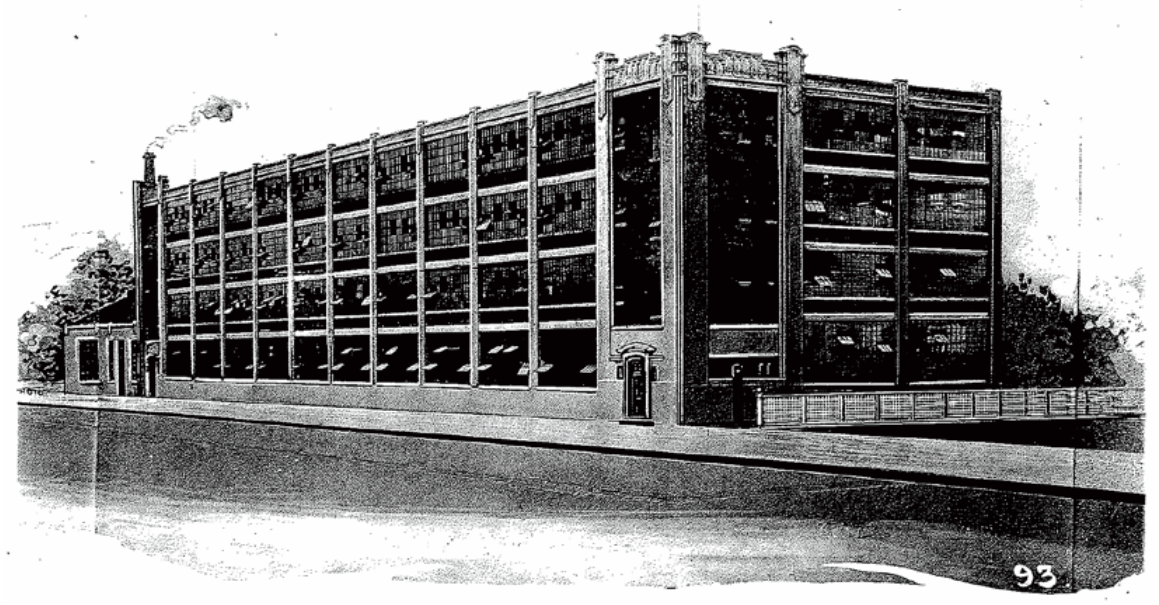

Figure 83: Wright Aeronautical Factory, ca 1916 (Harshbarger "Survey and Assessment of Mill Buildings," 2-11)

Wright Aeronautical occupied a relatively new building in Paterson, built in 1916 by the Paterson Industrial Development Company. It was located adjoining the Erie Railroad, Lewis Street, and Martin Street, on a series of vacant lots owned, according the 1915 Atlas of Paterson, by the "Society's Land Co." By 1931, the operation had expanded across parts

of three adjoining blocks. The Wright Company's expansion was fueled by the development of a new, more efficient air-cooled engine called the J-5C Whirlwind:

> After purchasing the Lawrance Aero Engine Corporation, Wright Aeronautical was able to successfully design and build the J-5C Whirlwind. It had 9 cylinders; was light at 510 lbs.; had no water-cooling appurtenances. It was simple and easily maintained. The Whirlwind developed 220 HP at 1800 rpm, a low speed that contributed to its reliability.[23]

The Whirlwind engine, built in Paterson, became famous—and profitable—by its use in Captain Charles A. Lindbergh's "Spirit of St. Louis" in 1927, the first airplane to fly nonstop across the Atlantic Ocean. Two years after Lindbergh's historic flight, the Wright and Curtiss companies merged to form the Curtiss-Wright Corporation, headquartered in Paterson through the 1940s.[24] The short-lived Gates-Day Aircraft Company followed Wright to Paterson in 1927 where they built civilian aircraft. In 1928 it was renamed the New Standard Aircraft Company, but by 1931 the company was bankrupt.[25]

Another 1920s industry innovation which had a smaller effect on Paterson was the development of "artificial silk," later known as rayon. The man-made cellulose-based thread was first developed in France by chemist Count Hilaire de Chardonnet, who acquired a patent for the process in 1884. His product caught the attention of the E. I. Nemours DuPont Company of Delaware, who purchased the patent rights after World War I.[26] The popularity of rayon grew quickly in the United States because of its low cost, relative to raw silk, and its reliability as a man-made fiber which was not dependent upon the weather or subject to disease.[27] The new fiber could also withstand the higher-speed power looms used in cotton and woolen mills, which were easily converted to the new production and required fewer skilled weavers to manage more looms.[28] The associated lower labor costs and higher production capability added to the cost-saving advantage of rayon over silk. By 1928, more than one hundred factories were producing rayon threads.[29]

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[23] "History," *Curtiss-Wright*, www.curtisswright.com/company/history.

[24] Harshbarger, "Wright Aeronautical Co.," ID #480898480, page 7. The Wright Aeronautical building is still extant outside of the Paterson Great Falls National Historical Park boundary (see Appendix C for 2102 site forms and Appendix D for 2017 NHL Resource Inventory).

[25] Harshbarger, "New Standard Aircraft Co.," ID #343704538, page 8, *Intensive-Level Survey of Paterson Industrial Mills*, New Jersey Department of Environmental Protection, Historic Preservation Office, 2012, www.patersonnj.gov/department/division.php?structureid=68.

[26] M. H. (Moïs Herban) Avram, *The Rayon Industry* (2d ed. New York: D. Van Nostrand Company, 1929), 5–6, *HathiTrust digital library*, https://hdl.handle.net/2027/uc1.$b578962.

[27] Avram, *The Rayon Industry*, 18.

[28] Wallerstein, "Voices from the Paterson Silk Mills."

[29] Avram, *The Rayon Industry*, 6.

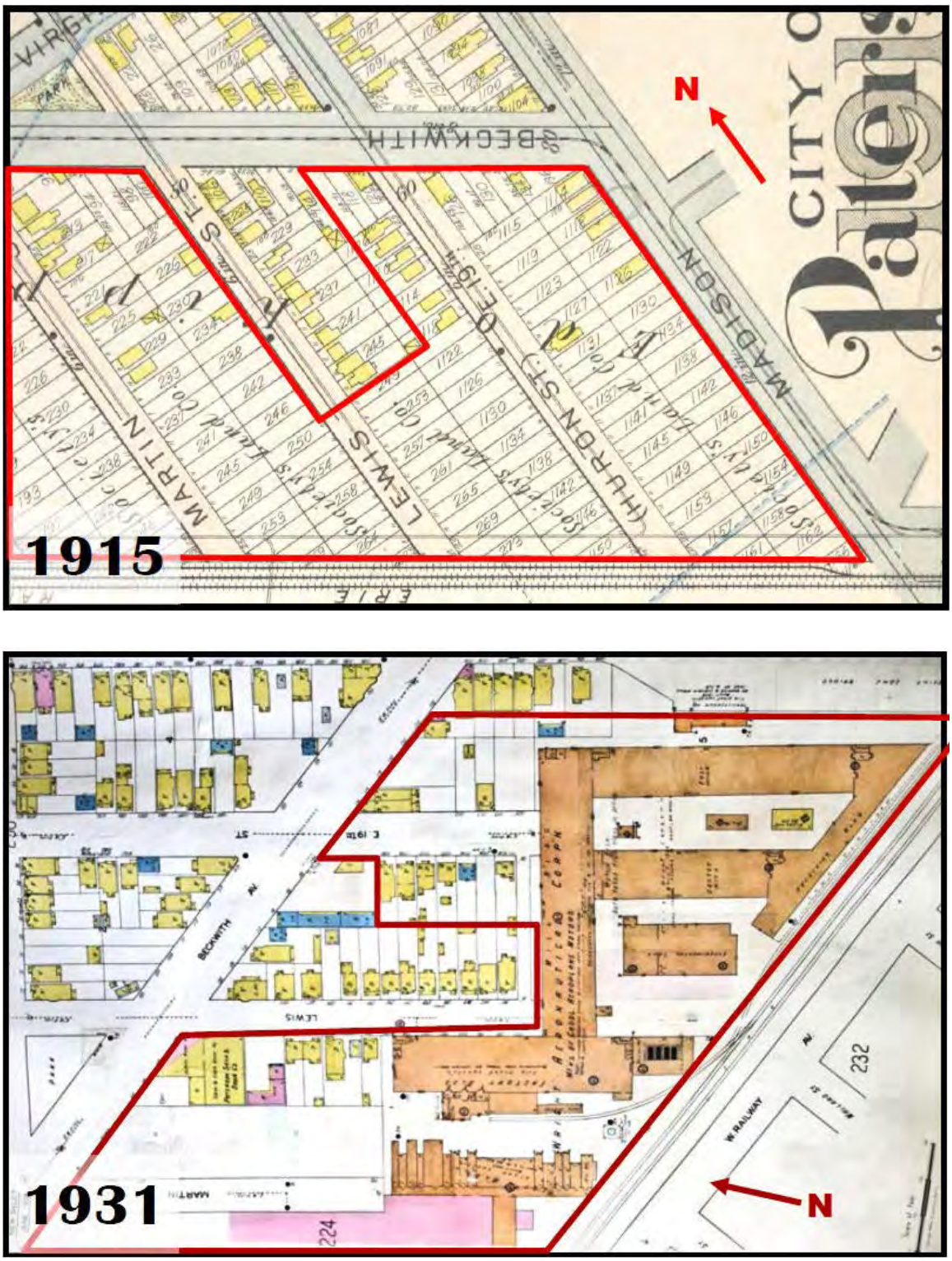

Figure 84: 1915 Atlas map detail and 1931 Sanborn map detail showing lots occupied by Wright Aeronautical (Harshbarger "Wright Aeronautical Co." survey form)

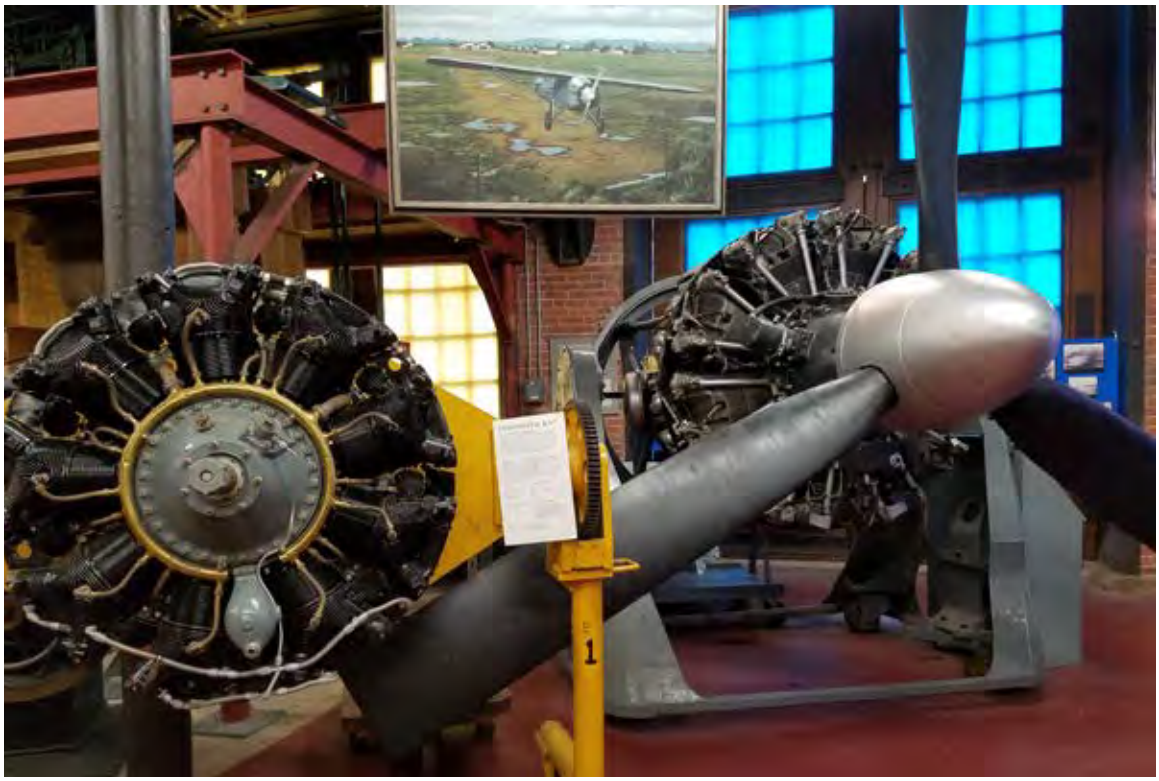

Figure 85: Whirlwind engines on display in Paterson Museum. (photo by author, 2018)

In Paterson, only a few silk mill operators moved to adopt rayon production, in part because the slower silk looms were uneconomical for rayon production. Wallerstein noted two companies conducting rayon weaving operations and three dying operations in 1927. Among those, Irving Brawer recalled his father's company, Brawer Brothers (a silk weaving and throwing company), experimenting with dyeing rayon as early as 1921. J. Rosen & Sons (ribbon makers) reportedly "did experimental work for Du Pont" and Edward Bloom "devoted part of his large and diversified operation to weaving rayon."[30] In his 1929 *Rayon Industry* report, M. H. Avram identified the Rosland Corporation of Paterson producing small amounts of rayon thread in 1928.[31]

Silk production continued to dominate the Paterson industrial landscape through the 1920s, much of it through the efforts of Jewish immigrants from the western region of the former Russian Empire (Poland and Belorussia). Early twentieth-century ethnic violence against Jews in the textile cities of Lodz and Bialystok prompted a new wave of Jewish immigrants, many of them skilled weavers. They passed through Ellis Island to begin a new life in the silk mills of Paterson. Though some left Paterson after the silk strikes, many

[30] Wallerstein, "Voices from the Paterson Silk Mills." The J. Rosen & Son building is still extant outside of the Paterson Great Falls National Historical Park boundary (see Appendix C for 2102 site forms and Appendix D for 2017 NHL Resource Inventory)

[31] Avram, *The Rayon Industry,* 59.

returned as the demand for silk returned during the war. Charles Shriner, who compiled William Nelson's *History of Paterson,* published in 1920, remarked on the new business plan emerging in the Silk City:

> Of late years the number of small silk manufacturers has increased enormously. The manufacturers of looms generally extend long credits and consequently little capital is required to purchase a single loom. Raw silk is almost always sold on a promise to pay in the future. Thousands of silk weavers, especially recent immigrants, have taken advantage of this state of affairs.[32]

With many of the large silk mills vacant because of previous corporate moves to Pennsylvania, the Jewish weavers seized the entrepreneurial opportunity. In the 1990s, local historian Jan Wallerstein interviewed people from the Paterson Jewish community who recalled the city's silk manufactures of the early twentieth century. Wallerstein notes that of the 400 silk manufacturers listed in 1918, the majority were small "two- and three-loom" operations owned by Jewish families. Some "mills" operated in the basement of the family home, while many others rented small partitioned areas within the large, former single-operator mill buildings.[33] Paterson, according to Wallerstein, was unique in the US silk industry "with its profusion of tiny units,"

> In the late 1920s, while producing 14 percent of all silk products in the country, Paterson was home to 42 percent of all American silk shops. There was nothing like Paterson anywhere, except, apparently, in turn-of-the-century Lodz and Bialystok, from which, conceivably, Paterson derived its distinctive fragmented pattern.[34]

Many of these small weaving shops survived the downturn in the economy after the Great War, and by 1927, the *Biennial Census of Manufactures* listed Paterson with 704 silk establishments.[35] Even a large number of small silk shops however, could not mitigate the loss in silk production and employment in Paterson as the larger companies moved elsewhere. By the late 1920s, Paterson silk industries employed around 16,000 people—down from a high of 25,000.[36]

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[32] Nelson and Shriner, *History of Paterson and its Environs,* 348. William Nelson died in 1914.

[33] These were often called "cockroach mills," referring to the large number of small weaving shops that might disappear as quickly as they appeared.

[34] Wallerstein, "Voices from the Paterson Silk Mills."

[35] US Dept. of Commerce, Bureau of the Census, *Biennial Census of Manufactures 1927* (Washington: Government Printing Office, 1930), 1473, https://catalog.hathitrust.org/Record/007426781.

[36] Alison Haley and Patrick Harshbarger, *Paterson Mill Survey* (City of Paterson, 2012), chapter 2, "Historical Context," 2–22.

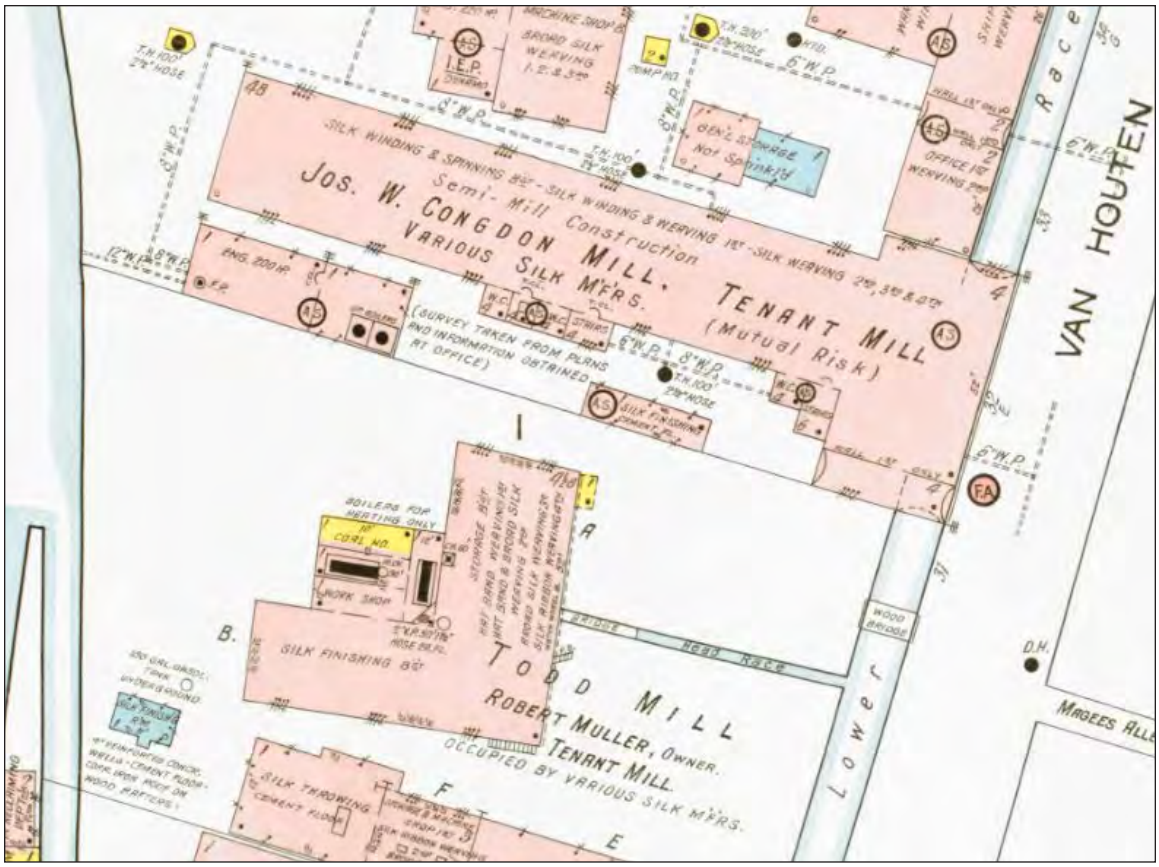

Figure 86: 1915 Sanborn map showing Congdon and Todd tenant mills (Princeton Archives)

The 1927 *Biennial Census of Manufactures* showed that silk production in the United States was in decline, with fewer mills operating overall compared to 1925.[37] Pennsylvania now led New Jersey in silk production, both in pounds and in value, in every category of silk products. Paterson, however, was still the capital of silk textile printing. The first decades of the twentieth century saw a push toward consolidation of the smaller printing establishments, in contrast to the proliferation of small silk weaving shops in Paterson. The National Silk Dyeing Company, for example, formed in 1908 from six companies, five of them located in Paterson. The consolidated firms included "Auger & Simon Silk Dyeing Company (of Paterson and Williamsport, Pennsylvania), the Lotte Brothers Company (of Allentown, Pennsylvania) and the Emil Geering Silk Dyeing Company, the Gaede Silk Dyeing Company, the Kearns Brothers Silk Dyeing Company and the Knipscher and Maass Silk Dyeing Company (all based in Paterson)."[38] By 1913, the large Weidmann Silk Dyeing Company of Paterson and the United Piece Dye Works, composed of Boettger

[37] *Biennial Census of Manufactures 1927*, 333–338. In 1925, US silk production reached its peak at 1,659 mills; in 1927, that number had fallen to 1,648 mills.

[38] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls*, 3.51. Auger & Simon, Gaede, and National buildings are extant outside the Paterson Great Falls National Historical Park boundary (see Appendix C for 2102 site forms and Appendix D for 2017 NHL Resource Inventory).

Piece Dye Works (Paterson) and Alexander Dye Works (Lodi), were both "substantially controlled by the 'Gillett Brothers' organization."[39]

The Standard Silk Dyeing Company, incorporated in 1907 by the brothers George, William, and Charles Cole, was not a consolidation of companies, though the brothers brought experience from work in both the Weidmann and Knipscher & Maass shops. In 1925, the Standard Silk Dyeing Company already occupied Passaic Mill No. 1 and much of the Waverly Mill, both located on Van Houten St. along the Lower Race (today's ATP site), as they embarked on a major expansion. Within two years the company was described as "one of the largest independent silk dyeing establishments in the country."[40] Standard Silk continued its expansion and consolidation, first with the purchase of the adjoining former Knipscher & Maass complex, and later "by linking of buildings and the construction of large boiler plants on the Mallory Mill and the Passaic Mill lots."[41] However, the death of George Cole shortly after this expansion apparently marked the beginning of a decline in the company's performance. Though the company continued to operate into the 1930s, hard economic times would close its doors, along with many others in Paterson.

Hinchliffe Stadium and the Great Depression

The economic expansion of the 1920s was founded on the financial principles established by Alexander Hamilton in the 1790s: public debt; banking institutions; manufacturing and commercial corporations; and at the center, the New York Stock Exchange, where traders bet on the value of all the above, and traded on the products of American agriculture. It was (and is) an elegant and dangerous dance which resulted in great financial gains, as well as infamous losses (William Duer for example); it made the United States a world economic power, and was the cause of devastating economic "panics" which swept the nation periodically.

On October 28, 1929, the US Stock Market crashed. The resulting catastrophic losses among investors, as well as a series of bank failures across the United States, caused a severe contraction of the US economy. As available credit dried up and consumers turned away from purchasing new items like automobiles and even clothing, factories and retail outlets reduced their workforces and the ranks of the unemployed in the United States grew to unprecedented numbers. What started as a recession soon deepened into the Great

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[39] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.51. The extant sites of these mills are located within the park boundary (today's ATP site). The Weidmann Co. building is extant outside the Paterson Great Falls National Historical Park boundary (see Appendix D for 2012 site form and Appendix E for 2017 NHL Resource Inventory).

[40] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.56, citing Albert H. Heusser ed., *The History of the Silk Dyeing Industry in America* (Paterson, NJ: Silk Dyers' Association of America, 1927), 304.

[41] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.56.

Depression, which lasted through the 1930s. Efforts by then-President Herbert Hoover to address the deepening depression failed. In 1932, Hoover lost his bid for re-election to Franklin Delano Roosevelt. Within the first 100 days of his presidency, President Roosevelt pushed through his "New Deal," including dramatic changes to the US financial system and recovery programs which would finally help turn the economy around.[42]

Figure 87: 1937 Lewis Hine photo of "bachelor shacks" on the edge of Paterson (National Archives & Records Administration)

The Great Depression had a profound effect on Paterson, its industries, and its people. In 1929, census records show 915 manufacturing establishments in the city; by 1933, that number had fallen to 568. The average number of wage earners fell by more than 12,000, from 32,686 employed workers in 1929 to 20,160 in 1933. Wages plummeted from just over $44 million to $17.5 million, while the value of products from Paterson industries fell from nearly $200 million in 1929 to just over $67 million in 1933.[43] The textile mills, as

[42] Great Depression context prepared by Edith Wallace for Paula S. Reed & Assoc., Inc., *Shrine of Democracy and Sacred Stone, Historic Resource Study, Mount Rushmore National Memorial* (Dept. of the Interior, National Park Service, Midwest Region, 2016), 102–104, citing Gary Richardson, Alejandro Komai, Michael Gou, and Daniel Park, "The Great Depression," *Federal Reserve History*, www.federalreservehistory.org/Events/DetailView/61.

[43] Biennial Census of Manufactures: 1933: Alabama-Wyoming. Summary for Cities Having 10,000 Inhabitants or More and for Counties: 1933 (Washington: US Bureau of the Census, 1935), 5, "New Jersey," https://catalog.hathitrust.org/Record/100949253.

the largest employer in Paterson, displaced the largest number of workers during the Depression. These men and women represented more than thirty percent of the people listed on the relief rolls in 1934. African Americans fared worst of all although only two percent of the overall population, more than ten percent of those listed on relief were African American.[44]

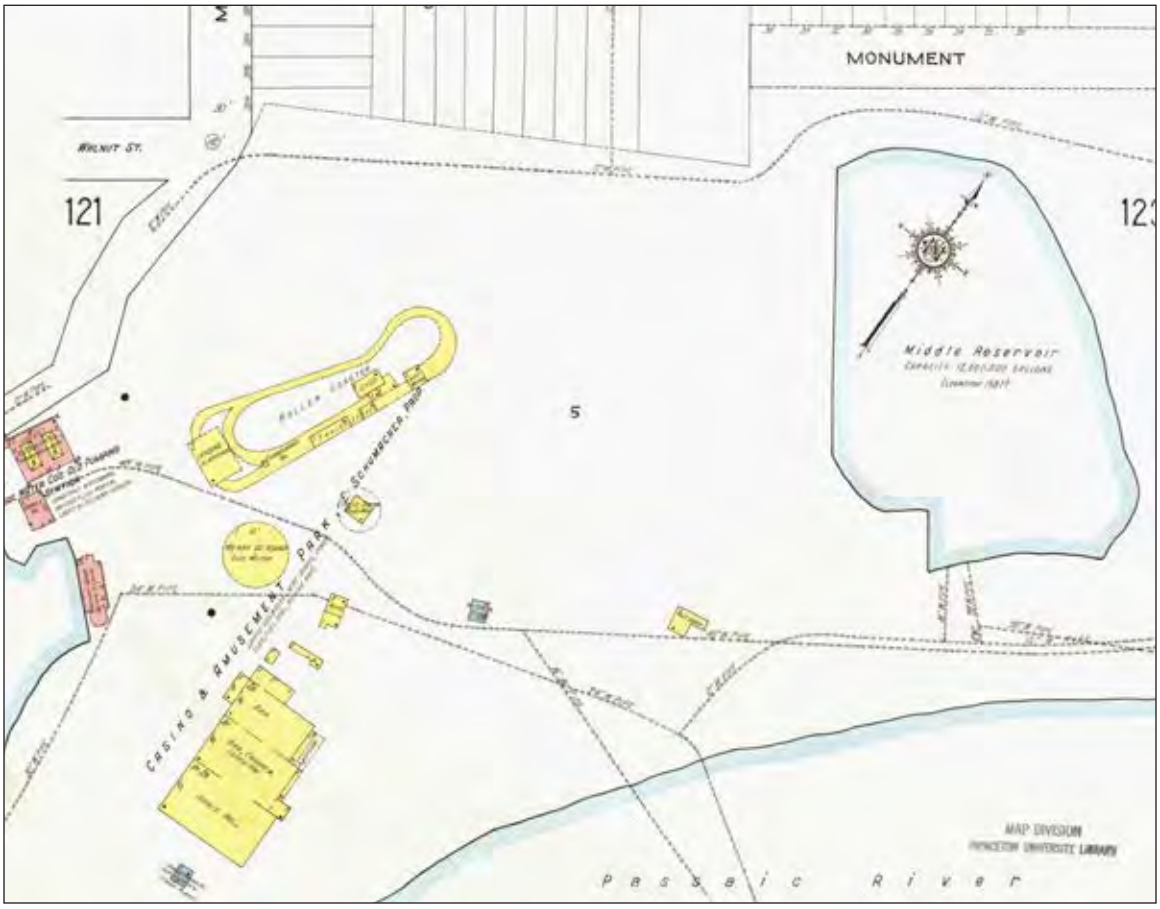


Figure 88: 1915 Sanborn map showing Falls Park (Princeton Archives)

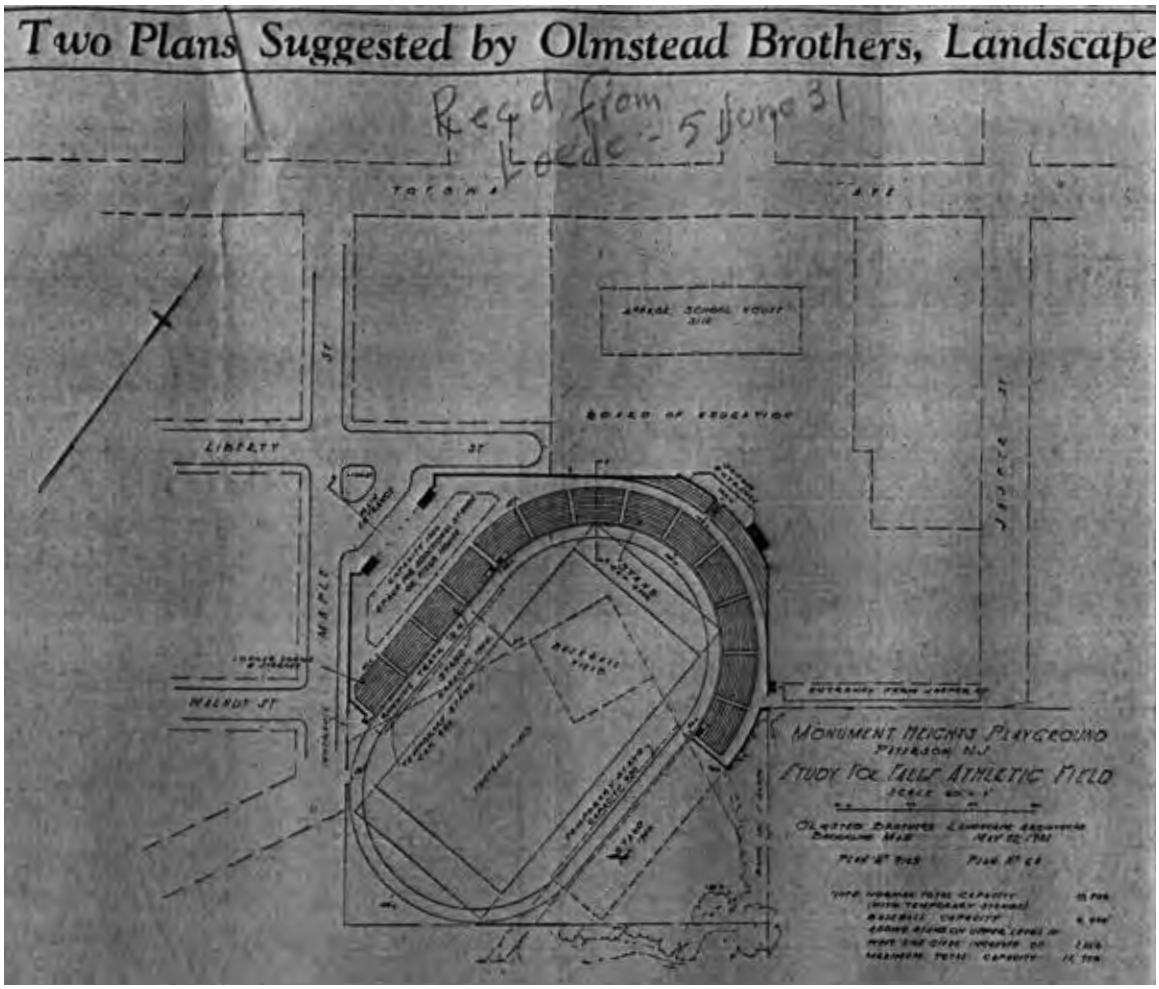
Attempts to relieve the unemployed and destitute population of Paterson came first in 1931 through private charities and city projects. Among the city's earliest projects was the development of "Great Falls Park." It was located on the land formerly occupied by Forest Garden and the Passaic Water Company's Lower Reservoir.[45] The water company's Pump House (still extant) continued to occupy the tract overlooking the Great Falls. Early in the century, the reservoir was drained and the land leased to E. Schumacher Properties

[44] Connolly & Hickey Historical Architects, LLC, *Historical Significance Investigation Report Evaluating the National Significance and Integrity of Hinchliffe Stadium* (Trenton: State of New Jersey Department of Environmental Protection, Natural and Historic Resources, 2011), 12.

[45] Clarke et al., *Vista Park Master Plan*, 26–27.

for a "Casino & Amusement Park," which included a dancehall, casino, and bar, a roller-coaster, and a merry-go-round. In 1916, the S.U.M. purchased the tract from the water company, and by 1930, at the time of the city's purchase of the tract from the S.U.M., the amusement park was gone. "Great Falls Park" provided renewed public access to the Great Falls overlook area and may have included a tennis court and possibly some other playground equipment. It appears that this land purchase may also have been in anticipation of another, larger stadium project still in its planning stages.

Figure 89: Detail from 1932 aerial photo showing park equipment (Paterson Museum)


Two Plans Suggested by Olmstead Brothers, Landscape
Recd from Loede - 5 June 31
LIBERTY ST
BOARD OF EDUCATION
MAPLE ST
WALNUT ST
JACOBUS ST
MONUMENT HEIGHTS PLAYGROUND
PATERSON N.J.
STUDY FOR FIELD ATHLETIC FIELD

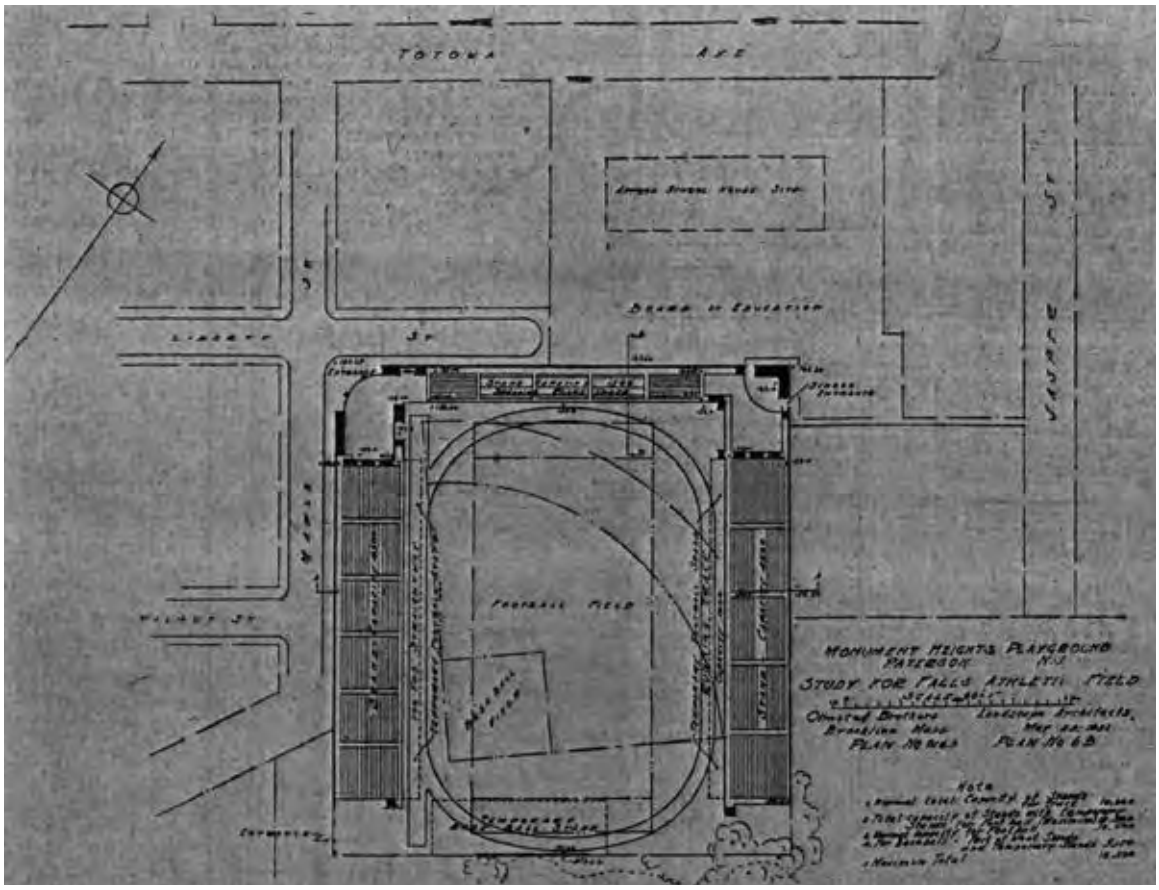


Figure 90: Newspaper clippings showing the two Olmsted plans (Library of Congress)

The City Municipal Stadium was a project long in the making. As early as 1921, then-mayor Frank Van Noort hatched a plan to construct a city stadium. Nothing came of the suggestion at the time and it was seven years before the idea surfaced again. In 1928, newly elected mayor Raymond Newman promised to appoint a stadium committee, but he died suddenly before he could follow through. In October 1930, with the city in the throes of the Great Depression, Mayor John V. Hinchliffe announced the selection of Monument Heights for the site of the proposed stadium.[46] The Olmsted Brothers landscape architecture firm prepared two stadium designs to fit the somewhat awkward space, in part defined by the remnant depression of the former Lower Reservoir.[47]

Construction began in 1931 and completed in 1932, at a cost of $217,000 (covered by a city bond issue). The construction of the City Stadium served as a local relief program, providing employment for many of the city's unemployed. Later improvements were completed under several of President Roosevelt's "New Deal" alphabet programs

[46] This area runs from the Great Falls overlook at Mary Ellen Kramer Park and Hinchliffe Stadium, to today's (2019) Vista Park.

[47] Paula S. Reed & Assoc., Inc. "Hinchliffe Stadium," National Historic Landmark (Washington, DC: US Department of the Interior, National Park Service, 2013), 25.

(so-called because they were commonly known by their acronyms), providing another round of temporary employment. Civil Works Administration (CWA) and Emergency Relief Administration (ERA) programs funded stadium repairs and additions in 1933 and 1934. In 1936, the Public Works Administration (PWA) funded construction of a roof over the northwest bleacher section.[48]

Figure 91: Hinchliffe Stadium, 1932 (Paterson Museum)

After its 1932 completion, the first event was a three-day July celebration of George Washington's 200th birthday. On July 24, the first baseball game played at the stadium pitted the Paterson Professionals, a semi-pro team, against the Michigan House of David, a professional barnstorming team. August marked the first Negro professional baseball event, featuring Atlantic City's Bacharach Giants with John Henry "Pop" Lloyd at short-stop, playing his final season. The next day, a double-header featured the Negro professional team the New York Cuban Stars against the semi-pro Paterson Truckers. The formal opening of the stadium in September 1932 featured the State Championship track and field meet. A dedication ceremony followed at which the stadium was given its official name, "Hinchliffe City Stadium," honoring both the then-current Mayor John V. Hinchliffe and his father, former Mayor John Hinchliffe. The 1932 season ended with the city's annual

[48] Paula S. Reed & Assoc., Inc., "Hinchliffe Stadium," 25, f.n. 77. The city funded forty-one projects using CWA money, employing up to 3,000 men in 1933 and 1934. (Connolly & Hickey, *Historical Significance Investigation Report,* 12)

Thanksgiving Day football game between the two high schools, Eastside and Central, at which 11,000 spectators reportedly filled the stands.[49] In 1933, Mayor Hinchliffe called the stadium "one of the major accomplishments of the administration," saying "I appreciate far more the completion under my administration of a permanent and modern playfield for the physical advancement of our young men and young women and for the entertainment of all who take an interest in athletic sports and physical training."[50] Though he did not mention it in his remarks, Mayor Hinchliffe's project also provided much-needed financial relief for the men employed in the stadium's construction.

In the end, the stadium's most lasting effect came from its entertainment value. In June 1932, the city transferred ownership of the facility to the Board of Education, overseen by a stadium commission. While the stadium would serve as a venue for high school football, baseball, and track and field events, the city needed receipts from semi-professional and professional sports—particularly baseball—to pay the cost of the facility's construction. Hinchliffe Stadium thus was available for relatively low cost (compared to larger venues like Yankee Stadium) at a time when Negro League baseball needed affordable home fields. The stadium served as the home field variously from 1932 to 1944 for Negro National League teams—the New York Black Yankees, the New York Cubans (Cuban Stars), and the Newark Eagles.[51] The field hosted such baseball greats as "Pop" Lloyd, Josh Gibson, Raleigh "Biz" Mackey, Oscar Charleston, Raymond Emmet Dandridge, Martin Dihigo, Buck Leonard, Willie Wells, George "Mule" Suttles, Leon Day, James "Cool Papa" Bell, Larry Doby, and Monte Irvin, all of whom were later inducted into the National Baseball Hall of Fame. Larry Doby, who also played high school football at Hinchliffe, and Monte Irvin are said to have been scouted during play at Hinchliffe Stadium. Other professional or semi-professional sports, including boxing, motorcycle and midget-car racing, as well as musical entertainments were featured on the field at Hinchliffe Stadium.[52]

Given Paterson's relatively small African American population in the 1930s, it is likely that a mixed audience attended the Negro League baseball games, including black fans from Paterson, New York City, and Newark, as well as Paterson's white baseball fans. Both of Paterson's white-owned daily newspapers, *Paterson Morning Call* and *Paterson Evening News,* covered the Negro League games at Hinchliffe Stadium, including box scores. In 1937, attendance at games fell, in part owing to a renewed economic downturn. A brief upturn in ticket sales in 1940 was followed by declining crowds until Negro League

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[49] Paula S. Reed & Assoc., Inc., *Hinchliffe Stadium,* 26.

[50] "City's Financial Condition Best in State, Mayor Reports," *Paterson Evening News* (*PEN*), January 3, 1933, as cited in Paula S. Reed & Assoc., Inc., "Hinchliffe Stadium," 26.

[51] Paula S. Reed & Assoc., Inc., "Hinchliffe Stadium," 13.

[52] Paula S. Reed & Assoc., Inc., "Hinchliffe Stadium," 16.

baseball ended at the stadium in 1944.[53] It was a reflection of changing economics and demographics stemming from World War II.

Figure 92: 1936 Newark Eagles team photo
(https://collection.baseballhall.org/PASTIME/newark-eagles-team-photograph-1936-1)

World War II and Paterson Industry

In September 1939, Europe once again faced a war which engulfed nations connected by allegiances forged during the First World War. For the first two years of World War II, the familiar allies of Britain, France, and Russia again fought German aggression, this time under the fascist regime of Adolf Hitler, while US industry geared up to supply the military's needs. On December 7, 1941, Japan, allied with Germany and Italy launched an air attack on US Navy ships and aircraft at Pearl Harbor. The next day, the United States declared war against Japan and in response, Japan's allies Germany and Italy, declared war on the United States. By the close of 1941, the United States was fully engaged in World War II.[54]

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[53] Paula S. Reed & Assoc., Inc., "Hinchliffe Stadium," 32, 37–38.

[54] "World War II Facts," *National Archives Franklin D. Roosevelt Presidential Library and Museum*, www.fdrlibrary.org/wwii-facts.

In Paterson, the Curtiss-Wright Corporation and Allied Textile Printing would both play a key role in the renewed war effort. Wartime employment by these two companies in particular improved the outlook for Paterson workers. Additionally, as government contractors, both were held to the new federal standard for hiring African American laborers. President Roosevelt's Executive Order 8802 stated: "there shall be no discrimination in the employment of workers in defense industries or Government because of race, creed, color, or national origin. . . "[55] By 1940, Paterson's black inhabitants had grown to more than 4,200 representing just over three percent of the city's total population of 139,600. By 1950, that number nearly doubled, likely owing to wartime employment opportunities, while the white population actually fell by more than 4,000.[56] As a large number of working-age men were called to military duty, African Americans and women filled the positions left vacant across all American industries.

The wartime cutoff of raw silk supplies from Asia crippled Paterson's already struggling silk industries. However, Allied Textile Printing (ATP), a company formed in 1938 by a merger of as many as a dozen small to mid-sized silk printing operations in Paterson, found a niche in wartime supplies, producing nylon parachutes.[57] The DuPont Company developed nylon, "the first commercially viable synthetic fiber," introduced in 1938 targeting the hosiery market.[58] The timing of nylon's release, however, came just in time to serve as a viable replacement for silk during the war. Though Allied Textile was a printing and finishing operation, the part of the Paterson plant located adjoining the Standard Silk Dyeing facilities on Van Houten St. took on production of military parachutes and straps made with nylon thread. In a time of rationing by the federal government of fuel and materials, government contracts ensured the company's access to both.[59] The shortage of silk material for civilian production presumably led Allied Textile to focus its dyeing operations on other textiles, including cotton and rayon, which also were among their pre-war products.[60] The ATP facility continued to operate in Paterson until 1982 when the plant closed permanently. Its campus on Van Houten St. eventually encompassed and integrated the buildings of Knipscher & Maass, the former Colt Gun Mill, Mallory Mill, Waverly Mill, and Todd Mill. A 1983 fire left only the burned remains of this campus, now known today (2019) as the "ATP site."[61]

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[55] Paula S. Reed & Assoc., Inc., "Hinchliffe Stadium," 35.

[56] "Historical Census Statistics On Population Totals by Race, 1790 to 1990, and by Hispanic Origin, 1970 to 1990, For Large Cities And Other Urban Places In The United States," *Library: Census Working Papers, United States Census Bureau*, www.census.gov/library/working-papers/2005/demo/POP-twps0076.html.

[57] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.64.

[58] Audra J. Wolfe, "Nylon: A Revolution in Textiles," *Distillations* (October 2, 2008), *Science History Institute*, www.sciencehistory.org/distillations/nylon-a-revolution-in-textiles.

[59] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.111.

[60] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.64.

[61] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 3.113–118.

The Curtiss-Wright Corporation was a significant industry supporting the United States and its allies during World War II and thus had a major positive affect on employment in Paterson. The company doubled its Paterson production capabilities between 1939 and 1941 and built a second factory in Wood-Ridge, southeast of Paterson, to keep up with demand for military aircraft engines:

> In 1940, Curtiss-Wright introduced the famous P-40 War Hawk, which through December, 1944 was to have a production run of 13,738 planes and serve with distinction in the Air Forces of 28 nations during World War II. Curtiss-Wright's aggregate war score: 142,840 aircraft engines; 146,468 electric propellers; 29,269 airplanes which included the Curtiss Commando transport and the Navy dive bomber, the Helldiver.[62]

Curtiss-Wright reportedly employed as many as 17,000 Paterson workers during the war.[63] After the war ended in 1945, Curtiss-Wright moved to its newer facility in Wood-Ridge, selling the Paterson plant in 1950. The loss of this large industrial employer was a blow to the City of Paterson. By 1950, the total number of people employed by the remaining Paterson industries was just under 34,000.[64]

The End of the S.U.M.

Though its original purpose for distributing waterpower was a distant memory, the S.U.M. retained its relevancy and profitability through the years by mill lot leases and its steam and electric power distribution network. However, the removals and failures of the various industries upon which the S.U.M. depended for its livelihood took a toll through the 1920s and the Great Depression of the 1930s. Immediately after the conclusion of World War II, the S.U.M. sold its assets (land and buildings) to the City of Paterson. The city leased the hydroelectric plant (still extant) to the Public Service Corporation (later Public Service Electric & Gas or PSE&G) to continue providing electric power to the city's remaining industries. The plant closed in 1969 when PSE&G did not renew its lease.[65]

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[62] "History: 1939-1948," *Curtiss-Wright*, https://www.curtisswright.com/company/history.

[63] Thomas Y. Owusu, "Economic Transition in the City of Paterson, New Jersey (America's First Planned Industrial City): Causes, Impacts, and Urban Policy Implications" Edited by David Wong. Urban Studies Research 2014 (September 3, 2014): 672794. https://doi.org/10.1155/2014/672794.

[64] Owusu, "Economic Transition in the City of Paterson," 4, Table 3.

[65] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls*, 5.61.

Conclusion

The first half of the twentieth century, with its steady exodus of industry from the city, proved to be a dizzying ride of ups and downs for Paterson's diverse community of industrial laborers. After a remarkable rise through the nineteenth century, in which the city's population seemed to nearly double every ten years, by 1950 the trend had reversed. From 1940 to 1950, Paterson's population fell for the first time since the 1800 census. Whites of various ethnicities were leaving the city at alarming rates, reduced over the decade by nearly 5,000, while at the same time 4,000 African Americans moved into the city. At a time of relatively high unemployment in Paterson, the influx of new residents put a strain on city services. According to the 1960 census, the white exodus from Paterson continued, dropping by an additional 8,000-plus people to 122,300. Again, African Americans were coming into Paterson at an increasing rate, this time growing in population from 8,000 in 1950 to 21,000 in 1960.[66] While the total population of Paterson had increased to over 143,000 in 1960, the number of employed persons fell to under 30,000.[67] Paterson and its industrial core were in distress.

[66] "Historical Census Statistics On Population Totals by Race, 1790 to 1990."

[67] Owusu, "Economic Transition in the City of Paterson," 4, Table 3.

CHAPTER 7

Epilogue— Industrial Collapse, Environment, Decay, and Hope for the Future

> . . .the vision centered around the use of the gift of nature, the Great Falls, as an inspiration to enhance the surrounding area, to build industry and jobs, attract visitors and new users to the area and buildings, and to build pride and vitality throughout Paterson and its neighborhoods.
>
> —Frank J. Blesso, 1993[1]

Introduction

Paterson today (2019) is a post-industrial city still working to find its place within the twenty-first century American economy. The city's industrial past lurks among the vacant factories, some little more than skeletons, destroyed by fire or neglect. Others were demolished, leaving gaping holes in the streetscape and brownfield contamination. Pollution from the historic industries and from modern carelessness and runoff affects the Passaic River as well. Despair from high unemployment is evident in the extensive graffiti, signs of homeless camps, trash, and empty storefronts. Still, there is a sense of hope for the future. A number of Paterson's historic mill buildings are re-occupied, housing condominiums, offices, and commercial businesses. Environmental groups are actively working to restore the river, while the Great Falls continues to attract visitors. The city's legacy of diversity endures, today representing a wide mix of ethnicities. Though most industry is gone, enterprising small businesses have cropped up, catering to a variety of cultural interests, including Peruvian and Middle Eastern foods.

Paterson's industrial resources, its raceways, mills, and machine shops, entwined with the natural beauty and power of the Passaic River and Great Falls, were the city's genesis and lifeblood for more than 150 years. Much like the rejuvenated Paterson of the early 1800s, those resources may again be the catalyst for renewal and reinvention.

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[1] Francis J. Blesso, "The Great Falls Project, Paterson, New Jersey" (August 1993, updated September 2005), 1, *City of Paterson, New Jersey, Document Center*, https://www.patersonnj.gov/egov/documents/1259875247_174835.pdf. See Appendix F for a full copy of the report.

Preservation and heritage tourism are important modern tools for community improvement. Efforts to preserve the area around the Great Falls began locally in the 1960s. However, the 2011 opening of the Paterson Great Falls National Historical Park instilled a renewed sense of possibility for a thriving Paterson. City, county, state, and national partnerships, both public and private, aimed at restoration and interpretation, adaptive reuse, environmental conservation, and community development, hope to reverse the tide of decay and put Paterson on a productive course for the future.

Decline of Industry: Paterson through the Second Half of the Twentieth Century

The population decrease in Paterson which began around 1950 reflected a general decline in manufacturing in the Northeast and Mid-Atlantic states. This post-war change followed the trend established before the war of industry relocations to the South and Midwest where land and labor were significantly cheaper. Additionally, the manufacturers who remained in the region moved their operations outside the cities in the 1960s, to more-spacious suburban sites which offered lower taxes and better access to improved transportation infrastructure.[2] Beginning in the 1970s, American manufacturing, particularly the textile and steel industries, moved operations to emerging industrial nations in Asia and South America.

In Paterson, where textile production still led the city's employment numbers in 1950, the downward trend accelerated over the next decades: Between 1950 and 1975, the city lost 40% of its manufacturing jobs and more than half of the 1975 base between 1975 and 1997. The transportation, finance, retail, and trade sectors also showed significant declines between 1975 and 1997.[3] However, population numbers for Paterson over the same period did not reflect the steady declines in employment opportunities. In fact, the total population fluctuated, rising from 139,000 in 1950 to more than 144,000 in 1970 and dropping again by 1980 to 137,000.[4] These changes were largely because of African American and Hispanic migrations into the city while at the same time whites were moving out to suburban locations.

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[2] Owusu, "Economic Transition in the City of Paterson," 4.

[3] Owusu, "Economic Transition in the City of Paterson," 4.

[4] Gibson and Jung, "Historic Census Statistics on Population Totals By Race, 1790 to 1990," Table 31. Other US industrial cities saw even more dramatic drops in population totals (and larger percentages of their overall population) over the same period: Detroit, Michigan went from over 800,000 in 1950 to just over 200,000 in 1980 (Table 23); Cleveland, Ohio fell from more than 900,000 in 1950 to under 600,000 in 1980 (Table 36); Camden, New Jersey, lost approximately 40,000 people and Newark, New Jersey, lost over 100,000 over the three decades (Table 31).

In the 1970s, ATP still employed several hundred people in its shops between Van Houten Street and the Passaic River. The company remained in operation in at least one building until 1982. The next year a devastating fire damaged many of the associated buildings. A plan by the Paterson Renaissance Organization to restore and reuse the buildings failed to materialize and the property stood abandoned. In 1992, the City of Paterson took ownership of the seven-acre parcel in a foreclosure proceeding.[5] The overgrown ruins became a homeless camp for many of Paterson's unemployed and more than twelve fires have since occurred on the property.[6]

Figure 93: Remnant of the former Colt Gun Mill (photo by the author, 2018)

[5] Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 1.5.

[6] Farewell Mills Gatsch Architects, *ATP CR Study, Vol. II, The Allied Textile Printing Site Existing Conditions,* 19.

Figure 94: Interior view of the former Colt Gun Mill (photo by the author, 2018)

Figure 95: Ruin of former Standard Printing Co. building, ATP site (photo by the author, 2018)

Figure 96: Interior of former Standard Printing Co. building, ATP site (photo by the author, 2018)

Figure 97: Graffiti covered stone wall remnant, possibly part of John Ryle Dye House, ATP site (photo by the author, 2018)

Figure 98: Overgrown remains of the Mallory Mill, ATP site (photo by the author, 2018)

The burned-out site of the ATP buildings is an extreme example of what remains on the ground after industry leaves a city. Managing derelict industrial sites like the ATP ruins, demolished factory sites, even abandoned factories still standing, is complicated by pollution from historic manufacturing waste and debris. The US Environmental Protection Agency (EPA) defines these sites as "brownfields": "A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."[7] The federally supported grant fund aimed at cleaning up brownfields is seen as a revitalization program, "by funding environmental assessment, cleanup, and job training activities." This is particularly important, as many brownfields are located in disadvantaged communities of color—largely the result of decades of the flight of industry and white populations from city centers.

The same environmental forces affect the Passaic River and are widely reported on in local and national media. While much of the current industrial contamination is concentrated below Paterson in the area of Newark, residual pollution remains around the Great Falls. In a 2010 report called "The Dirty Truth About That Other Jersey Shore," National Public Radio (NPR) reporter Art Silverman toured the Passaic River from its headwaters to the Newark Bay. At Totowa, Silverman met a man fishing in the river, but noted, "There's a ban on eating fish from the lower Passaic River." At Paterson, Silverman's guide pointed

[7] "Overview of EPA's Brownfields Program," *EPA United States Environmental Protection Agency*, https://www.epa.gov/brownfields/overview-epas-brownfields-program.

out the "rippling sewage froth on the surface of the water" below the Great Falls.[8] In the same 2010 report, Dr. Kirk Barrett, then-director of the Passaic River Institute, detailed the chemicals and heavy metals he observed in the Passaic waters at Dundee Dam, about ten miles below Paterson, including "mercury, lead, PCBs, arsenic, DDT, polyaromatic hydrocarbons, dibenzofuran, naprocine(ph), benzopyrene, trysine, fluorenscein(ph), fluorine, napromine."[9] Today (2019) the primary focus for clean-up in the Passaic River is the seventeen-mile stretch below Dundee Dam to the Newark Bay, a Superfund site where dioxins from the production of Agent Orange in the 1960s still pollute the river sediments.[10]

Figure 99: Knipscher & Maass Silk Dyeing Company, showing wastewater flowing into the over-used river. (Paterson Historic Preservation Commission)

[8] "The Dirty Truth About That Other Jersey Shore." All Things Considered. NPR, November 19, 2010. https://www.npr.org/2010/11/19/131167397/the-dirty-truth-about-that-other-jersey-shore.

[9] "The Dirty Truth About That Other Jersey Shore."

[10] "The Passaic River Basin," *Montclair State University, Passaic River Institute*, https://www.montclair.edu/passaic-river-institute/the-passaic-river-basin.

Community Efforts to Improve Paterson

Despite its many challenges, Paterson is not all gloom and doom. A large number of the historic mills and other industrial buildings remain standing throughout the city, and in particular, within the Great Falls/S.U.M. National Historic Landmark District (see Appendices D and E), many of them are rehabilitated and re-occupied. This is largely the result of efforts begun in the 1960s to preserve Paterson's important natural and industrial history at a time when federal urban renewal projects often left cities scarred and fractured. Frank Blesso, employed in Paterson's Redevelopment Office at the time, summarized the significance of these early efforts in preservation: "Their success forestalled destruction by a planned highway of the earliest industrial complex in the United States and thereby provided a publicly supported and sustainable alternative to urban renewal by fiat."[11]

It was the combined efforts of Mary Ellen Kramer (wife of Paterson's then-Mayor Pat Kramer), new city assistant engineer Frank Blesso, and Columbia University graduate architecture student John Young which defeated the so-called peripheral highway proposed by NJDOT in 1960s. The highway, officially known as Route 20, would have destroyed much of the raceway system and many historic mills. It was designed to connect the Paterson business district with the new Interstate Route 80 then under construction. Route 20 was still in its planning stages, but the Paterson business community supported the plan and it was one of Mayor Kramer's key campaign promises. As John Young and his fellow students recorded the historic industrial architecture of Paterson, Young realized the significance of what he saw:

> John Young's Master's thesis "A Proposal for Paterson" helped raise the awareness of Mary Ellen Kramer, Frank Blesso and others to the rich treasure present in the industrial architectural fabric of Paterson. Young's research provided the documentation for a nomination form to place the Great Falls/SUM area on the US Department of Interior's National Register of Historic Places as an 89-acre historic district.[12]

The district was listed on the National Register in April 1970 and immediately derailed the highway plan. Section 106 of the National Historic Preservation Act of 1966 required review of National Register-listed properties impacted by federally funded projects. According to Blesso, the Route 20 project "was to be constructed with 50% to 80% federal funding."[13] Although Young and his fellow advocates proposed alternatives for the peripheral highway, the state permanently tabled the Route 20 plan.

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[11] Blesso, "The Great Falls Project," 1.

[12] Blesso, "The Great Falls Project," 3. See Appendix F for district documentation. John Young later formed Urban Deadline, a group which aided underfunded redevelopment projects.

[13] Blesso, "The Great Falls Project," 4.

The energized group then formed the Great Falls Committee and in 1971 incorporated as the Great Falls Development Corporation (GFDC), out of which several important projects issued. Among those projects was the clean-up and dedication of Great Falls Park above the Falls, formerly part of the Forest Garden property and the Waterworks. Appropriately, the public park provided an area of natural respite to Paterson citizens and reopened public access across the iron bridge over the Falls. The park was later renamed Mary Ellen Kramer Park to honor the work of Paterson's first lady.

As general recognition of Paterson's historic and natural resources grew through its many national designations—National Natural Landmark (1967/1984), Historic American Engineering Record (1973), National Historic Landmark (1976/1985), National Civil and Mechanical Engineering Landmark (1977) (see Introduction and Appendix G for details)—fundraising and consciousness-raising efforts paid off. In 1974, the former S.U.M. Hydroelectric Plant, still closed under then-owner PSE&G, was returned to city ownership and restored, providing hydroelectric energy to 10,000 Paterson homes. In the late 1970s, an Economic Development Administration Title IX grant funded rehabilitation of the Essex Mill, Phoenix Mill, and Franklin Mill for mixed residential and commercial uses. Under the same grant, the Rogers Erecting Shop was restored to house the Paterson Museum on the ground floor and offices above.[14] From 1977 and 1982, the S.U.M. raceways underwent archeological review and the Upper Raceway, Upper Tailrace, and Ivanhoe Wheelhouse basin were rehabilitated.[15] The city established the Paterson Historic Preservation Commission to protect and promote Paterson's historic buildings.

In 1998, the City of Paterson, owner of the ATP site after the 1992 foreclosure, approved a housing development on the site. The plan failed by 2001, prevented by community action and problems inherent with developing a historic industrial site, ending finally with the loss of state housing funds. Again, the site sat essentially abandoned by all but the homeless, until the 2002 murder of a homeless person at a camp near the river. City, state, and federal agencies responded by preparing a public-private agreement to study potential appropriate uses for the site, resulting in the 2010 multi-volume architectural and archeological report entitled, *Cultural Resource Investigation of the Allied Textile Printing Site, Paterson, NJ.* [16]

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[14] Blesso, "The Great Falls Project," 5–8. After a hiatus in activity, in 1993 the Cooke Mill building was rehabilitated for low-income housing and the St. Joseph Hospital's Family Care Center. (Blesso, "The Great Falls Project," 10)

[15] Lee, "Raceway Research and Documentation," 11.

[16] Eileen Markey, "A Wake-up Call: Paterson Slaying Spurs Move at Run-down Site," *The Herald News*, August 16, 2002, "The News," *Paterson Friends of Great Falls*, http://patersongreatfalls.org/news/023.htm; Farewell Mills Gatsch Architects, LLC, "Cultural Resource Investigation of the Allied Textile Printing Site, Paterson NJ" (Trenton, NJ: Division of Property Management and Construction, 2010), see Hunter Research, *ATP CR Study, Vol. I, Factories Below the Falls,* 1.9–1.10.

State and Federal-Level Efforts

As early as 1991, New Jersey Representative Robert A. Roe introduced a bill in the US Congress to establish the Great Falls Historic District Commission. The purpose of the commission was "to prepare a plan for the preservation, interpretation, development, and use, by public and private entities, of the historic, cultural, and architectural resources of the Great Falls of Passaic/S.U.M. National Historic District in the City of Paterson, State of New Jersey."[17] The nine-member commission was to include four US Cabinet Secretaries, the Director of the NPS, and four city, county, and state appointees. The bill died in committee. In 1996, Congress passed an Omnibus Parks and Public Lands Management Act, which identified the Great Falls Historic District for Department of the Interior grants (with a fifty percent match) through cooperative agreements for development plans, restoration, preservation, and interpretation of historic resources within the Historic District.[18] Five years later, in 2001, then-Representative Bill Pascrell sponsored legislation requiring the Secretary of the Interior "to study the suitability and feasibility of designating the Great Falls Historic District in Paterson, New Jersey, as a unit of the National Park System."[19] It became Public Law No. 107-59 in November 2001 and the next year the department initiated the "Special Resource Study."

In the meantime, in 2004, the state of New Jersey created Great Falls State Park, encompassing the raceway system and the historic industrial district. State funds provided additional restorative work on the raceways to address water leakage problems.[20] Plans were drawn up to create the "Outdoor Living Room," a multi-dimensional park around both sides of the river and Falls, in which different sections of the park offered different cultural and environmental experiences.[21] The plan, however, was never implemented and the state apparently never took ownership of any of the property.

It was around the time of the 2004 Great Falls State Park designation that the National Park Service (NPS) "Special Resource Study" was completed. The study concluded that the Paterson district did "not meet criteria for suitability, feasibility, or need for NPS management," citing its recent state park status as reason to be assured of its

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[17] "HR 3079—To Establish the Great Falls Historic District Commission for the Preservation and Redevelopment of the Great Falls National Historic District in Paterson, New Jersey, 102nd Congress (1991–1992)," https://www.congress.gov/bill/102nd-congress/house-bill/3079/actions?r=11&s=5.

[18] Public Law 104-333, November 12, 1996, 110 STAT. 4158 (see Appendix H).

[19] "HR146–Great Falls Historic District Study Act of 2001, 107th Congress (2001–2002)," https://www.congress.gov/bill/107th-congress/house-bill/146?s=2&r=17.

[20] Lee, "Raceway Research and Documentation," 11.

[21] Rutgers University, et al., "Great Falls State Park, Paterson, NJ, Paterson's Outdoor Living Room," *NJ Department of Environmental Protection*, https://www.nj.gov/dep/parksandforests/parks/great_falls_state_park_draft_master_plan_overview.pdf.

continued preservation.[22] In 2006, the entire New Jersey congressional delegation sent a letter to the Secretary of the Interior urging the establishment of a National Historical Park at Paterson, centered on the Great Falls.[23] Representative Bill Pascrell, Jr. initiated legislation in 2007, and in 2009, the US Congress authorized the creation of the Great Falls National Historical Park, which officially opened in 2011. In 2014, Congress passed legislation to include Hinchliffe Stadium within the park boundary, although the stadium would remain under the ownership of Paterson Public School System.[24]

Although the city of Paterson and many of its residents continue to face high unemployment and poverty, the hope of revitalization remains strong with the National Park Service now a major stakeholder in the future of Paterson. In 2009, shortly after the Paterson Great Falls National Historical Park's authorization, Passaic County historian Edward Smyk commented in a *New York Times* interview: "What a national park does is it cements the site in the public's conscience.... Could you imagine what this would do for Paterson with the superior resources of the Park Service?"[25]

As a "partnership park," the federal government (NPS) owns only a fraction of the area and resources located within the legislated boundaries. Instead the NPS is directed by the legislation to "enter into cooperative agreements" with the owners of nationally significant resources, including city, state, and private entities. The NPS is directed to "identify, interpret, restore, and provide technical assistance for the preservation of the properties," thus providing an avenue for federal funding to aid in the revitalization process.[26] At the same time, the partner organizations provide additional visitor experiences and expand the park's ability to interpret the variety of resources.[27]

Much like the historic vision of Alexander Hamilton and his "association of adventurers," Paterson today (2019) remains centered on the Great Falls. The vision draws on the power of the Falls to inspire and, in the words of Frank Blesso, "to build industry and jobs, attract visitors and new users to the area and buildings, and to build pride and vitality throughout Paterson and its neighborhoods."[28]

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[22] Iolavera, et al., *Great Falls Historic District, Special Resource Study,* vi.

[23] Letter of Appeal, "Area around the Paterson Great Falls is designated to be a National Park!" *Paterson Friends of the Great Falls*, http://patersongreatfalls.org.

[24] "HR 2430, Hinchliffe Stadium Heritage Act, 113th Congress (2013-2014)," *Congress.gov*, accessed August 28, 2019, https://www.congress.gov/bill/113th-congress/house-bill/2430.

[25] Jacqueline Mroz, "The Great Falls: Power for Another Revolution?" March 27, 2009, *The New York Times*, , https://www.nytimes.com/2009/03/29/nyregion/new-jersey/29fallsnj.html.

[26] Public Law 111–11, March 30, 2009, 123 STAT. 1185 (see Appendix F). See also, "Paterson Great Falls National Historical Park, Draft General Management Plan," January 2016, Department of the Interior, National Park Service.

[27] "Paterson Great Falls National Historical Park Foundation Document," April 2018, *National Park Service, Paterson Great Falls National Historical Park, New Jersey*, https://www.nps.gov/pagr/getinvolved/foundation-document.htm.

[28] Blesso, "The Great Falls Project," 10.

Figure 100: Park view, 2018 (photo by the author)

Conclusion:
Recommendations for Future Research

Time constraints on this HRS project prevented any significant archival research outside of collections currently available online (which is a substantial and continually expanding subset). However, this study draws heavily upon the remarkable number of well-researched histories of Paterson and the Society for Establishing Useful Manufactures, the authors of which accessed the documents in various archives and collections (see Bibliography, Summary of Significant Sources). As most bibliographies only include sources actually cited within the text, they are rarely a comprehensive record of associated archival collections. Thus it is recommended that a thorough list of all the associated archival collections, their locations, and their availability online (or not) be prepared to aid future archival research.

Of particular interest to many researchers are the artifact and archival collections held by partner institutions associated with Paterson Great Falls National Historical Park or collected through archeological surveys. A collections management plan should be

prepared to record and protect the items, and to enhance their interpretive use, as detailed in the GMP:

> NPS and partners would work together with universities or museum organizations to document, preserve, manage and store any geologic, ethnographic, industrial or architectural artifacts recovered as a result of archeological investigations on park lands. Wherever they are located, NPS and partners would strive to manage the collections in conformity with NPS records and catalog systems. Provisions would allow for appropriate access to the collections by NPS staff and the public for their use in exhibits, interpretation, resource management and research. NPS would assist partners with identifying and assembling items and materials related to the park's interpretive themes.[29]

A partnership-wide plan and database would clarify the scope of current collections and help inform future accessions.

This study addressed many of the traditional themes associated with the Great Falls of the Passaic: natural history, the rise and fall of the S.U.M., the industrial and immigrant history of Paterson, and touched upon the twentieth century history of African Americans in Paterson. Additional themes for future researchers to pursue should include the following:

> 1) The early history of African Americans in Paterson, both enslaved and free laborers. [suggested sources: James J. Gigantino, II, "'The Whole North Is Not Abolitionized': Slavery's Slow Death in New Jersey, 1830–1860," *Journal of the Early Republic* 34, no. 3 (Fall 2014): 411–437; James J. Gigantino, II, *The Ragged Road to Abolition: Slavery and Freedom in New Jersey, 1775–1865* (Philadelphia: University of Pennsylvania Press, 2014).
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> 2) Though women are noted as industrial laborers in Paterson factories, their various roles through the history of the city should be addressed thematically, including women as industrial workers, women within the owner/management class, and women as local business owners/workers.
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> 3) Child labor in Paterson industry has been noted, but not deeply researched. Given the large number of children employed through much of Paterson's industrial history, this is a significant theme which should be addressed.
>
> 4) The history of labor as it evolved in Paterson, its organization and relations with management, the difference between skilled and unskilled labor, and the connection between the changing structures of industrial work with the development of the labor movement is a theme which could constitute an entire volume on its own.
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> 5) A context of industrial machine production, to include discussion of raw materials and processes in "machine shops" like those found in Paterson,

[29] "Paterson Great Falls National Historical Park, Draft General Management Plan," 54–55.

> should be completed and appended to this report. Machine shops were integral to Paterson industry from its beginning in 1791, with the construction of the looms and spinning apparatus used in the S.U.M. cotton mill. It evolved through the nineteenth century into a major industry, supplying industrial textile machines, steam locomotives, and steam power equipment to manufacturers nationally and internationally.

Finally, several of the contemporary sources used in this study (Trumbull and Nelson in particular) include comprehensive lists of the industries then located in Paterson (1880s–1920), often with details of the earlier uses of the factory buildings. A database of the industrial buildings of Paterson, each with a chronological list of the industries which occupied the buildings over time, would be extremely helpful to develop a comprehensive view of the changes over time. Entries should be cross-referenced to the Sanborn Fire Insurance Company maps and other Paterson maps for visual orientation. The Paterson Historic Mill Survey (Appendix D) and the 2017 NHL Resource Inventory (Appendix E) should serve as a baseline for such a database.