A SITE'S HISTORY: THE ITHACA GUN COMPANY

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ABSTRACT

The Ithaca Gun Factory, located in Ithaca, New York above one of the city's most prominent and scenic features, Ithaca Falls, laid abandoned for several decades before its demolition in the year before this thesis was written. The Gun Company long stood along Fall Creek as one of the last enduring beacons of that area's industrial core, and in its absence persists a cultural narrative on the role of the industrial landscape in today's society. This thesis is a collection of important or pertinent information on the history and current conditions of the site of the factory and the land in its immediate vicinity. Although the site is highly visible within the Ithaca community, it lacks accurate and comprehensive documentation. While a formal survey has yet to be conducted, this work is intended as a collection of the full breadth of data from the site's industrial beginnings, to its most recent history.

This thesis is divided into two parts, the first being a study of the Gun Company's history, from the land's ancient geological beginnings, through its inception among other formative industries, to the toxic circumstances leading up to its eventual dilapidation and razing, with proposals for its redevelopment opening a new chapter in the site's history. The second part documents the site in its extant condition, focusing on its specific landscape characteristics that portray the site's significance as well as its shortcomings. The historical documentary information was assembled from a variety of primary and secondary sources including historic maps, photographs, correspondence, reports, environmental assessments, written histories, and past studies conducted on the site. The description of existing conditions is based on site visits and previous documentation of the site's components and partial surveys of its vegetation and topographical features.

ACKNOWLEDGEMENTS

It is through the patience, encouragement, and generosity of many people that this thesis has been made possible, and for that I would like to express my gratitude. First and foremost, I would like to thank Professor Kathryn Gleason, for opening my eyes to the important role that history plays in the landscape. This project has been dear to you, and many others, for several years now; it was your dedication to the future wellbeing of the site that exposed me to its potential significance. Thank you for your continual guidance in this endeavor and for providing me with much of the documentation necessary in the research of this thesis. For this I would also like to thank Sarah Steuteville, whose diligence in rehabilitating the site inspired me, and whose knowledge of the site directed my research. I would also like to thank Professor Dan Krall for pushing me to succeed in this pursuit and whose knowledge of recording cultural landscapes was invaluable.

It would be remiss of me to not mention my parents, Ewa and Jess, for the sake of avoiding any sentimentality. Without your unconditional love and support, I would not have made it through this process. Your constant championship, throughout what have been trying times on all sides, has truly allowed me to finally achieve this goal. Thank you, for the years of support and unwavering confidence in me, especially when I did not possess it in myself. And to William, your assistance in completing this work has been immeasurable, and I can only hope that I will be there to lend a hand in kind some day.

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CHAPTER 1.

INTRODUCTION

The preservation of historic structures has long been in practice, but it is only in recent years that the preservation of cultural and historic landscapes has been established. The reclamation of post-industrial landscapes is a study at an even more nascent stage. The globalization of industry at the close of the 20th century has left in its wake an abundance of environmentally impaired post-industrial landscapes that fail to fulfill their development potential and instead fall prey to negative public perception, in turn rightfully wary of their toxic legacy.[1] These landscapes are often found in advantageous locations near city centers, supported by existing infrastructure, along natural waterways, and surrounded by residential communities.[2] While left in states of decay, industrial landscapes are assets with potential to provide valuable use in the communities into which they might be reintegrated, offering an awareness of the site's industrial heritage.

This thesis is a study of one such landscape, the former site of the Ithaca Gun Company located within the heart of the City of Ithaca, New York, along one of its most prominent and scenic waterways. It is a collection of important or pertinent information on the history and current conditions of the site of the factory and the area immediately surrounding it. Although the site is highly visible within the Ithaca community, it lacks accurate and comprehensive documentation. While a formal survey has yet to be conducted, this work is intended as a collection of the full breadth of data from the site's industrial beginnings, to its most recent history. The structure of this thesis is based, to an extent, on the guidelines for Cultural Landscape Reports set by the National Park Service Standards and Guidelines. It includes a history of the site and an evaluation of existing

[1]Luis Loures, "(Re)-developing Post-industrial Landscapes: Applying Inverted Translational Research Coupled with the Case Study Research Method," IPP - Politechnic Institute of Portalegre - ESAE; CIEO - Centre of Spatial Research and Organizations - UALG (2006), 1-2.

[2] Ibid.

conditions, following these guidelines, but does not include recommendations for further treatment of the site as a Cultural Landscape Report would. However, similar to a CLR, critical landscape and cultural research is presented with the intent to inform thoughtful development decisions in the immediate future of the site.

Beginning in 1883, the Ithaca Gun Factory operated on the precipice of the south bank of the Fall Creek Gorge along with several other mills that collectively formed an industrial hub, critical in the early expansion of the town. It remained a major institution in the area, garnering national and international recognition for the high quality of its firearms, for over a century. By the later half of the 20th century, the factory was one of the last remaining industries on Fall Creek, eventually succumbing to financial pressures brought on by waning demand and high production costs in 1986. For almost two decades, the factory lay abandoned, seen as a blight on the adjacent neighborhoods and a toxic nuisance. As is the case with many post-industrial sites, contaminants from the time of the factory's use linger, an issue compounded by the pollution's location in the tight-knit urban fabric of Ithaca's residential neighborhoods with primary schools in close proximity. The Ithaca Gun Company facilities were used in the manufacture of shotguns, and extensive residual lead contamination has been identified in high concentrations in both the factory buildings and the surrounding land. In addition to the presence of lead, traces of arsenic have been found, as well as uranium and other potentially harmful contaminants. The pollution of the site has plagued its recent history, making it a point of contention among community members and officials. The site's location along the ridge of the gorge abuts the Ithaca Falls Natural Area, a recreational public park showcasing the powerful falls which the Gun Company parcel overlooks. Its proximity to this unique natural area, an attraction for tourists and locals alike, heightens the scrutiny under which official efforts to cleanup the site have been placed. The recent demolition of the factory in the past year in preparation for new development underscores the importance of documenting the remaining historic landscape features.

The boundaries of this site extend beyond the limits of the Ithaca Gun Company parcel for the purposes of this study in order to complete a comprehensive work that includes surrounding factors. The Ithaca Gun Company site is located in the City of Ithaca within the greater south central Tompkins County of New York State. The approximately eleven acre site is comprised of the former Ithaca Gun Company property at 121-125 Lake Street encompassing 2.1 acres, the adjacent Ithaca Falls parcel with 8.4 acres and the parking lot owned by Cornell University as well as the lawn along Lake Street allowing for about half of an acre. Its position on the western facing slope of Gun Hill, overlooks Ithaca Falls, following Fall Creek to the Cayuga Lake valley in the west. To the north, the site is bounded by the Fall Creek Gorge; to the east by the Sigma Nu fraternity property, the Quaker Overlook owned by the Ithaca Religious Society of Friends on Willard Way, and other residential properties; to the south by residential housing and apartments across Lake Street, which wraps around the site to the west and gives way to the residential Fall Creek Neighborhood beyond. Steep slope covers the length of the site along the east-west axis, which is effectively divided on the north-south axis into the Gun Company property and parking lot along the southern border stretching to Lake Street, the Island area divided from the Gun Company by the raceway and continuing to the gorge wall, and the floodplain of the Fall Creek Gorge, nearly a 200 foot drop from the precipice of the island, with access from the west off of Lake Street.

The first section of this work on the site's history describes the immediate contextual history surrounding the Ithaca Gun Company as part of the Fall Creek industries, as well as its specific site history. The historical documentary information was assembled from a variety of primary and secondary sources including historic maps, photographs, correspondence, reports, environmental assessments, written histories, and past studies conducted on the site. The second chapter, after the introduction, describes the geological history of Fall Creek and the greater network of the Finger Lakes region in shaping the conditions of the waterway that made it ripe for harnessing its power for

industrial endeavors. From the site's ancient history, the next chapter explores its earliest development as an industrial nucleus in the Ithaca area from 1813 through the end of that century. This chapter sets the stage for the conditions surrounding the beginning of the Ithaca Gun Company in the fifth chapter, which follows the business through its history in Ithaca to its end in 1986. The fourth chapter offers an account of early tourism to the gorge and falls congruent to the time period represented in the chapter on early industry. Following the closing of the factory, the building lay abandoned for almost two decades, during which time community members lobbied for a complete cleanup of the site. The sixth chapter serves as an account of the EPA cleanup of the site from 2000 to 2004 and the community's involvement in its remediation. The last chapter in the site history section explores the debate surrounding the plans for the site's redevelopment up to its demolition and present state in 2010.

The next section, on the existing conditions of the site, includes a narrative description, photographs, and site plan, which document and classify the categories of landscape characteristics and features following the format set by the NPS Cultural Landscape Report guidelines. The description of existing conditions is based on site visits and previous documentation of the site's components and partial surveys of its vegetation and topographical features. This study incorporated the work of the 7010 level studio in their analysis and documentation of the Ithaca Gun site. Their recording of the raceway brought to light the idea of considering it for possible nomination to the national register. Some of the challenges concerning the documentation of the site were the ongoing demolition and removal of historical built structures, which restricted access to the site, and the lack of complete or updated site surveys, where several sources were incompatible such as with detailed topographical surveys of the area.

PART 1. SITE HISTORY

CHAPTER 2.

FALL CREEK: GEOLOGICAL HISTORY

The Cayuga Lake watershed, of which Fall Creek is a sub watershed, is part of the greater Oswego River Basin, handling all of the Finger Lakes watersheds and draining into one of the Great Lakes, Lake Ontario.[3] The region is characterized by the vast plateau carved by streams and glacial action spanning much of Central New York and into Pennsylvania.[4] Overall, the watershed spans almost 800 square miles across seven counties and forty-four municipalities, funneling the runoff from this expanse into Cayuga Lake, the lowest point in the watershed's basin.[5] The basin is filled and replenished in large part by upland tributaries of which Fall Creek is the largest, draining 128 square miles of land in northeast Ithaca.[6] Over 140 tributaries contribute to the quantity and quality of the basin's water supply, of which Fall Creek supplies almost a quarter of the flow into the lake and its direct drainage, designating it a subwatershed.[7]

The watershed began its formation in ancient time, 550 million years ago when the plain covering the region sank just below sea level.[8] Layers of sand, mud, lime, and salt sediment accumulated over a period of 325 million years,[9] hardening to form the

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[3]Genesee/Finger Lakes Regional Planning Council, "Cayuga Lake Watershed Preliminary Watershed Characterization," (2000), 4.

[4]Ralph S. Tarr, *The Physical Geography of New York State* (New York: The Macmillan Company, 1902), 8.

[5]Cayuga Lake Watershed Network, "Issues in the Cayuga Lake Watershed," (Interlaken, NY), 1.

[6]Ibid.

[7]Genesee/Finger Lakes Council, 7.

[8]O. D. von Engeln, *The Finger Lakes region: its origin and nature* (Ithaca, New York: Cornell University Press, 1961), 2-3.

[9]Ibid., 3.

layers of Devonian shales and sandstones[10] partially visible today in the deep troughs cut by glacial activity. These cross sections offer a glimpse at geological history unique to the region.

200 million years ago an uplift of the sea bottom revealed the weathered peneplain of little topographic relief, divided along a low water parting line that would prove significant in the development of the Finger Lakes region.[11] A second upheaval heightened this divide as well as the gradient of south-flowing streams, which had to cut lengthwise through the rock bed,[12] continuing until the time of the Ice Age.

The glacier front advanced southward from its originating point on the Labrador Plateau around 2.5 million years ago, massing at its thickest 2,500 feet in Central New York. Within the million years of the Pleistocene epoch, two continental glaciations occurred, separated by an interlude.[13] The first glaciation carved out the striking topography of the Finger Lakes, while the second advance fit into its predecessor's furrows.[14] The preglacial valleys of the region with northward flowing streams were transformed to lakes via the first glacial action. The valleys offered broad channels through which the ice might move easily, allowing for greater mass and swiftness of flow, in turn lending itself to the rapidity of erosion and deepening of the lakes.[15]

While the north/south vales were deepened by denudation, east/west tributaries were shallowed by drift deposits from the second ice recession, causing the streams to

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[10]Tarr, 8.

[11]Engeln, 3-5.

[12]Ibid., 5.

[13]Ibid., 9.

[14]Ibid.

[15]Tarr, 181.

seek new routes lengthwise[16] and resulting in the postglacial gorges marking the head of Cayuga Lake. North of the Fall Creek gorge the preglacial valley is detectable, filled with drift[17] but uncut by postglacial carving, while the glacial drift deposits that buried the ancient channel during the Pleistocene epoch are now eroding.[18]

The modern geological history of the watershed began some 12,000 years ago with the close of the last Ice Age,[19] an important period in the formation of Fall Creek and the other gorges at the lake's head. Fall Creek had its preglacial origin at what is now the head of the East Branch of the Tioughnioga River in Cortland, NY, but whose flow glacial deposits prevented, cutting off its course down Fall Creek Valley.[20] As Fall Creek extended eastwards in postglacial time, it intercepted several north-flowing streams in its path, terminating their southward extensions and reversing the drainage course, shifting the location of the preglacial divide further south.[21] Today Fall Creek gorge follows a descent of 400 feet over its one-mile course[22] from its upper valley to the point where its waters reunite with those at the surface of Cayuga Lake. Elevations at the southern end of the watershed range from 394 feet at the lake to heights of 1804 feet above sea level.[23]

Ithaca Falls, located in the lower reaches of Fall Creek gorge, is of the type of cataract found where there is no particularly hard layer of rock to hold the fall at that

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[16]Ibid., 182.

[17]Ibid., 174.

[18]Gregory N. Nagle, J. Timothy Fahey, Jerry C. Ritchie and Peter B. Woodbury, "Variations in Sediment Sources and Yields in the Finger Lakes and Catskills Regions of New York," *Hydrological Processes* 21 (2007): 828-838.

[19]Cayuga Lake Watershed Network, 2.

[20]Engeln, 43-44.

[21]Ibid.

[22]Ibid., 73.

[23]Genesee/Finger Lakes Council, 6.

level.[24] It is slowly moving upstream from its original location at the line of the rock wall of the Cayuga Valley, being reduced to rapids.[25] Its lack of a singular vertical fall is attributable to the weaker sandstones and shales over which the creek runs,[26] neither of which are hardy enough to serve as a cap rock found at other major falls. Rather, the stream runs in its descent over a series of smaller cascades, the locations of which are possibly determined by the former higher levels of the lake,[27] with Ithaca Falls being the last in that succession. The stream course was determined by the position of deltas at the earliest height of the lake, gradually dropping down with the lake level and following the lower deltas.[28]

The lower reaches of Fall Creek are characterized by eroding stream banks, however densely vegetated floodplain areas and active beaver dams in Upper Fall Creek mitigate the eroded sediment and point to bank erosion as a lessening cause of sediment accretion.[29] Erosion of postglacial gorges deposit sediment, forming delta plains at the inlet of Cayuga Lake.[30] Sediment is least dense on the western side of the lake, permitting swampy vegetation while the eastern shore lends itself to the location of the town of Ithaca.

Primarily rural, Ithaca constitutes the only city in the watershed and its point of greatest population density.[31] One third of the watershed's land is covered by agricultural ground, comprising the largest land use followed by residential and vacant lands, of

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[24]Tarr, 177-178.

[25]Ibid., 178.

[26]Engeln, 73.

[27]Ibid.

[28]Tarr, 259.

[29]Nagle, et al., 828-838.

[30]Tarr, 209.

[31]Genesee/Finger Lakes Council, 9.

which more than half are classified as agricultural.[32] Upper Fall Creek in particular is characterized by intensively cropped areas, with high concentrations of stream sediment with cultivated surface sources found in the lower portion of the creek.[33] Human impact must be considered, as the watershed is more complex than the physical intricacies of water flow. While the quality of water in the Cayuga lake watershed is generally high, an area of concern in this report's line of study is are the heavy metals present in the sediment of Fall Creek in high concentrations.[34]

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[32]Ibid., 8.

[33]Nagle, et al., 828-838.

[34]Genesee/Finger Lakes Council, 2. *Wild, Scenic and Recreational Rivers*, 2010, http://www.dec.ny.gov/lands/32739.html.

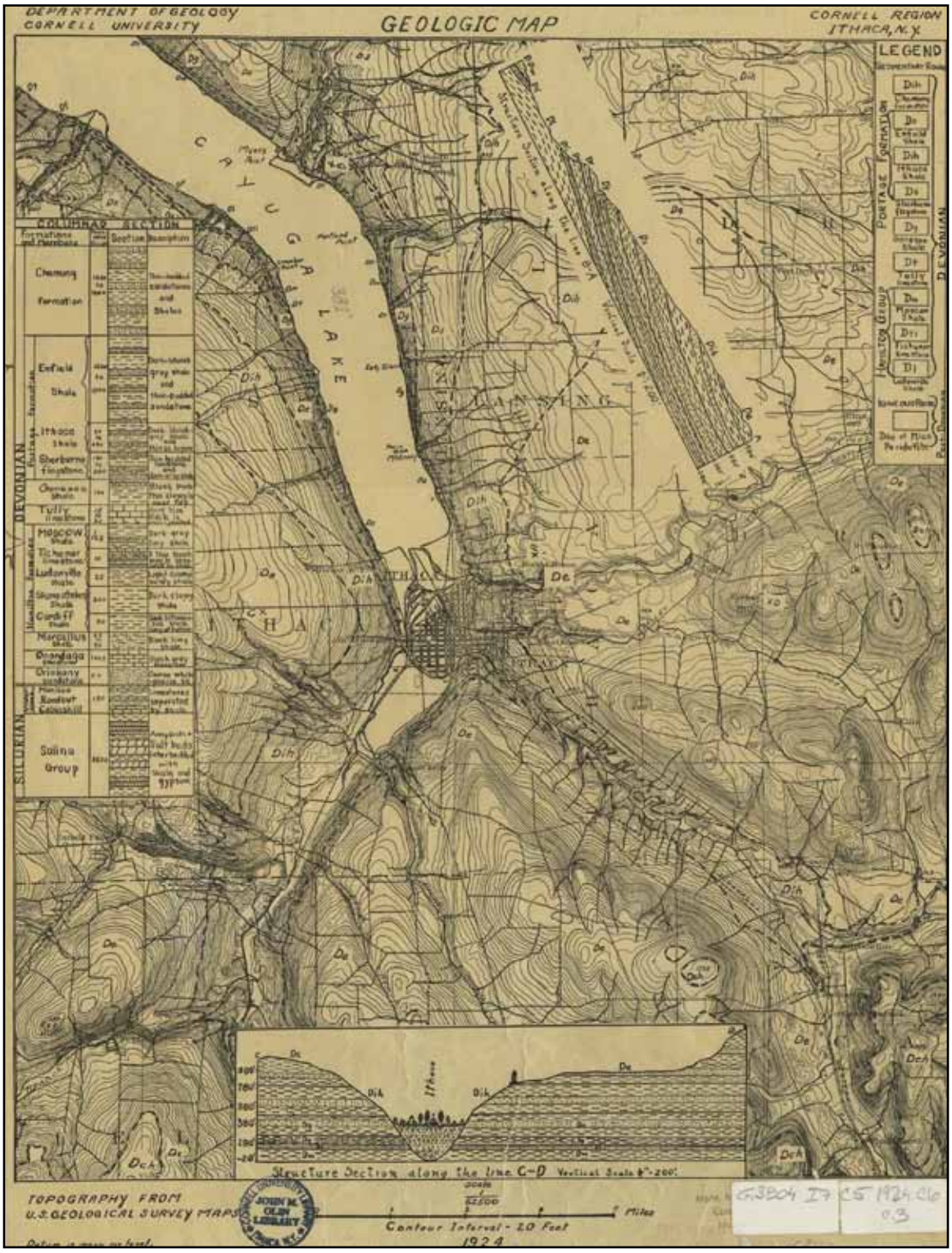

Fig. 1. Cornell University Dept. of Geology, *Geologic Map, Cornell Region, Ithaca, N.Y.* [map], 1:62,500, (Ithaca, N.Y.: Dept. of Geology, Cornell University, 1924).

Fig. 2. U.S. Geological Survey, *Ithaca East quadrangle, New York* [map], Photorevised 1978, 1:24,000, 7.5 Minute Series, (Reston, VA: U.S. Department of the Interior, USGS, 1978).

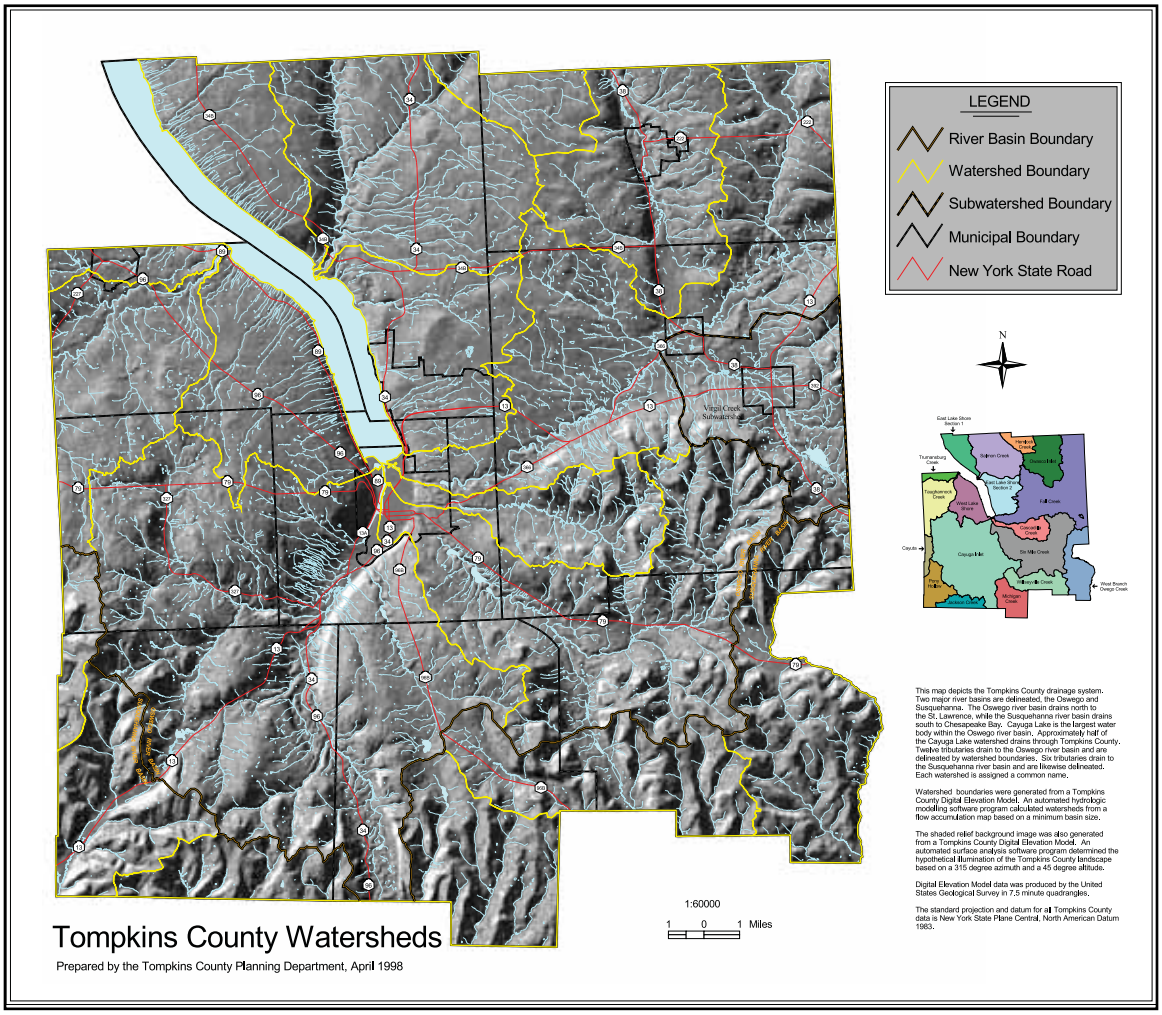

Fig. 3. Tompkins County Planning Dept, *Tompkins County Watersheds* [map], April 1998, 1:60,000, Tompkins County GIS Portal, www.tompkins-co.org/gis/maps/pdfs/Watershed-E.pdf.

CHAPTER 3.

FALL CREEK: EARLY INDUSTRIAL CENTER

While the preceding chapter was devoted to the discussion of the glacial formation of the Finger Lakes, the region's earliest inhabitants held their own belief as to the unique configuration of the five parallel lakes. The Iroquois, who settled the land in its post-glacial history, followed the poetic legend of the shape of the Finger Lakes being a mold of the "Great Spirit pressing its hand to the earth,"[35] Indeed, many of the lakes, Seneca and Cayuga among them, owe their names to the tribes of the Iroquois. While the written history of the native tribes in the area is lacking, some of what is known is included here as an important precursor to the later settlement and industrial expansion of the town and Fall Creek in particular.

As much as six centuries before Ithaca's pioneers landed at the lake's southern shores, the Iroquois were established across what is now New York State by the 1200's.[36] The Iroquois were comprised of a league of five nations, the youngest of which was the Cayuga tribe,[37] from whom the lake's name originates, and who resided on the land along it's eastern and western hills.[38] While little is written of the Cayuga tribe from the time of its initial establishment to the late 1700's, there is knowledge of the league's internal political organization and culture.[39] Dependent on agriculture for their livelihood, the Iroquois moved their villages, comprised of dozens of long-houses large enough to shelter entire families, as often as their crops could yield.[40] An account of a visit by

[35]Daniel R. Snodderly, *Ithaca and Its Past*, Revised Edition (Ithaca, New York: DeWitt Historical Society of Tompkins County, 1984), 9.

[36]Ibid.

[37]Henry Edward Abt, *Ithaca* (Ithaca, New York: R.W. Kellogg, 1926), 13-14.

[38]Snodderly, 9.

[39]Abt, 14.

[40]Abt, 15-16.

Moravian missionaries, who traveled to the region with hopes of conducting religious conversions, a plan that never came to fruition, describes Fall Creek in the 1750's, then called Nogaene, rushing wildly over what is presumably Ithaca Falls from a height of only ninety feet.[41] As European settlers began to colonize the area beginning in the early seventeenth century, the Iroquois land became a buffer territory in an increasingly hostile environment.[42] In the time preceding the Revolutionary War, the Cayuga were described as "the least warlike"[43], however it is written that throughout the war, some of the Iroquois tribes, the Cayuga seemingly included, took arms against Americans.[44] In 1779, General John Sulivan and his troops destroyed the Cayuga's towns and crops with orders for complete destruction, although the tribe claimed to have been a neutral party during the war.[45] Soldiers from Sullivan's Expedition described the land surrounding the tribe's town, located where the city of Ithaca now lies, as having soil "superior to any on the country", with "several fine streams of water".[46] Ten years later, after the war had ended, they relinquished their land to the state, receiving only a small sum of money and a reservation at the end of the lake,[47] to which they were resigned two years after Ithaca's first non-native settlers took residence and received aid from the tribe.[48] This reservation was also ceded, and over 1.5 million acres of former Iroquois land was allocated to the Military Tract in 1781.[49]

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[41]Rev. William Beauchamp, ed., *Moravin Journals Relating to Central New York*, 1745-1766, 39, quoted in Henry Edward Abt, *Ithaca* (Ithaca, New York: R.W. Kellogg, 1926), 22.

[42]Abt, 16-20.

[43]Ibid., 22.

[44]Snodderly, 9.

[45]Abt, 24-25.

[46]*Journals of the Military Expedition of General John Sullivan*, 744, quoted in Henry Edward Abt, *Ithaca* (Ithaca, New York: R.W. Kellogg, 1926), 26-27.

[47]Snodderly, 9.

[48]Horace King, "Early history of Ithaca : a lecture" (Ithaca, New York: Mack, Andrus, 1847), 6.

[49]Snodderly, 9.

Beginning in the 1790s, the Military Tract of Central NY balloted off bounty land to eligible Revolutionary War soldiers.[50] The land where some of Ithaca's earliest industries were to be situated on Fall Creek was encompassed by military lot 94, allotted to Hendrick Loux[51]. The parcel was bounded by Tioga Street to the east, Eddy Street to the west, with the city line acting as north and south boundaries.[52] Loux conveyed his allotment to Robert McDowell via a Mr. Van Resselaer who in turn transferred the northern 170 acres of the property to Benjamin Pelton in 1797.[53] In May of 1813, Phineas Bennett purchased that same northern parcel of land along Fall Creek after determining it to be a valuable site for manufacture.[54] At that time the falls were located outside of the village's northern limits, but this inconvenience in considering the site for industrial purposes was outweighed by the greater volume of water to power mills in Fall Creek than any other in Ithaca, compounded by the demand for Cayuga plaster.[55] Simeon DeWitt acquired the middle section of the lot apart from fourteen acres, while Abraham Bloodgood held the 1,400-acre tract west of North Tioga Street, in combination to comprise the town of Ithaca.[56]

Bennett built a gristmill in 1814 southeast of the Lake Street Bridge crossing Fall Creek near the base of the falls.[57] The mill was powered by a wooden flume originating above the main fall and built into the southern rock wall of the stream and diverted into a

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[50]Bernie Corcoran, *Military Tract in Tompkins County, NY*, 1999, http://nytompki.org/bounty.htm.

[51]Amy Humber, "Fall Creek," in *Ithaca's Neighborhoods : the Rhine, the Hill, and the goose pasture*, ed. Carol U. Sisler, Margaret Hobbie and Jane Marsh Dieckmann (Ithaca, N.Y.: DeWitt Historical Society of Tompkins County, 1988), 39.

[52]Ibid.

[53]John H. Selkreg, *Landmarks of Tompkins County New York* (Syracuse, New York: D. Mason & Company Publishers, 1894), 109.

[54]Abt, 45.

[55]Ibid.

[56]Humber, 39-40.

[57]Selkreg, 169.

channel in the rock.[58] Although Bennet transferred the property to George Wells, he and his son apparently retained an interest[59]. In December 1816 the Bennets conveyed land to Abner Howard along with waterpower rights sufficient to run his chair factory[60]. A month later, David Woodcock bought the property through George Wells and sold a small part of it to Frederick Deming and Jonathan F. Thompson, who built an oil mill directly east of the bridge.[61] Their oil mill was built on just fifty square feet of land, but in 1820 Thompson, along with his business partner Porter, both leading merchants in the village, added a distillery on the site, which expanded to board cows that fed on the vegetable oil by-product and waste, their business lasting at least until the mid 1820s.[62]

Above the oil mill Bennett rebuilt a sawmill around 1816-1817 that had been inherited with the purchase of the lot in 1813.[63] A dam was constructed across the creek above the site of the sawmill into which water, from this mill and a plaster and carding mill that Bennett had established in the meantime, was emitted through a flume in the rock.[64] In 1822 Origen Atwood and Sylvester Roper operated a minor foundry close to the sawmill.[65] Above this stood Bennett's aforementioned plaster mill and carding room, which he sold to Barney McGoffin and Ansel Bennett in 1819, who then turned the property over to George Blythe in 1820.[66] Blythe operated wool processing at the mill as part of a wool carding and cloth factory until 1825.[67] Gere, Gun, and Nichols leased the

[58]Ibid.

[59]Ibid., 170.

[60]Ibid.

[61]Ibid.

[62]Humber, 40-41.

[63]Selkreg, 170.

[64]Ibid.

[65]Humber, 41.

[66]Ibid.

[67]Ibid.

mill in 1827 and returned it to plaster production.[68] The property was bought shortly after in November 1827, by Jeremiah S. Beebe, who settled in Ithaca in 1817 and owned a store on State Street across from the Ithaca Hotel, including the original grist and oil mills and 125 acres of land.[69] The plaster mill remained under the previous lease, as did the distillery, which was leased to Gere and Gun for ten years.[70]

Further upstream, Levi Coon, who came to Ithaca from New Jersey, constructed a gun-barrel factory at the falls near Forest Home in the early 1820s.[71] Utilizing the waterpower via a wooden sluiceway, Coon operated a trip hammer, a powered hammer often propelled by a waterwheel with a helve that is tripped by lever action used in this case to weld metals.[72] Local curiosity and attraction to the factory gave rise to the name of its power source as Triphammer Falls, and known as such today.[73] Although the date is unknown when production ceased at the gun-barrel factory, it was to be just below the site of Beebe dam at the top of the falls, constructed by Ezra Cornell in 1838.[74]

The timing of the earliest mills coincided with the construction of the Erie Canal, begun in 1817 and completed in 1825, allowing the growing settlement communication with the Atlantic seaboard and consequently the broader market.[75] Products travelling to or from New York prior to the waterway navigated the terrain for a trip of about six weeks.[76]

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[68]Ibid.

[69]Selkreg, 120, 170.

[70]Ibid., 170.

[71]Barbara Bell, *Glance Backward* (Watkins Glen, New York, 1970), 38.

[72]Ibid.

[73]Ibid.

[74]Ibid.

[75]Horace King, “Early history of Ithaca : a lecture” (Ithaca, New York: Mack, Andrus, 1847), 20.

[76]Ibid.

Beebe purchased the Olympic Falls Flouring Mill, so named for the previous title of the falls, in 1827,[77] hiring Ezra Cornell in 1828 to overhaul and manage his mills on Fall Creek.[78] Beebe's other interests on the property included a plaster mill and machine shop, the latter of which was under the proprietorship of Lucas Levensworth, directing twelve employees in producing 20,000 to 30,000 tubs and articles of that nature.[79]

That same year, Cornell began the task of replacing the wooden flume, which was prone to freezing in the low winter temperatures, needing constant maintenance, with what would be the tunnel and raceway system to supply power to the mills adjacent to the falls.[80] Cornell designated the excavation of a 200-foot long channel through the cliff.[81] After four years of work, the twelve by thirteen foot throughway was completed in 1832 with a total cost of 2,000 dollars, and provided water to the newly constructed open raceway.[82] Cornell otherwise installed mechanical improvements and economical methods of manufacture during his time as millwright at the existing enterprises, persuading Beebe to erect a larger flourmill under his direction.[83]

By 1832 Cornell was responsible for all of Beebe's affairs on Fall Creek,[84] but after the national panic of 1837 the prosperity that Ithaca had known in the 1830s ceased. The severity of the effects of the panic in Ithaca were perhaps heightened by the spirit of speculation brought on by the sale of Simeon De Witt's estate following his death in

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[77]Humber, 41.

[78]Engst, Elaine D. "Cornell University." *ECommons@Cornell*. 5 Mar. 2007. Web. http://hdl.handle.net/1813/5418, 3.

[79]Selkreg, 133.

[80]Abt, 62.

[81]Humber, 41.

[82]Selkreg, 170-171.

[83]Cornell, Alonzo B. ""True and Firm": Biography of Ezra Cornell, Founder of the Cornell University." *ECommons@Cornell*. A. S. Barnes & Co. Web. http://hdl.handle.net/1813/5412, 50.

[84]Engst, 3.

1834, and the real estate frenzy moved by the promise of the construction of the Sodus Bay Canal connecting Cayuga Lake to Lake Ontario.[85] In 1834 the estimated worth of total Ithaca imports and exports was over 1.5 million dollars, making it an interest in the state as a port.[86] Although construction on the canal was announced and the acreage had been purchased, neither it nor the potential additional railway lines came to fruition.[87]

With the crumpled economy, Beebe sold his properties between 1838 and 1840, including the gristmill which was bought from Beebe by Horace Mack and John Speed who operated there for a year before turning it over to the Ithaca Falls Woolen Manufacturing Company in 1840, who in turn adapted it for woolen cloth production, enlarging it to a height of five stories.[88] After manufacturing there for eleven years, the building was destroyed by fire in 1851 and the business was abandoned at that location.[89] The site returned to its previous role of processing flour under Henry Walbridge for a short time beginning in 1854.[90] The business failed and the mill was taken over by Albert M. Hull, who managed the Fall Creek Milling Company.[91] A large three-story building housed the mill, measuring 40 by 100 feet, with a two-story storage ell attached.[92] Farmers left their grain at the front-loading dock to be ground by wooden machinery before being placed in paper sacks with Hull's Flour stamped across the front to be distributed across the county.[93] The mill operated for 72 years using the power of

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[85]Selkreg, 136-138.

[86]Abt, 63.

[87]Ibid, 64-65.

[88]Selkreg, 171.

[89]Humber, 41.

[90]Ibid.

[91]Ibid.

[92]J. A. Miller, *Ithaca, N.Y. as a city of residence and manufacture* (Elmira, New York, 1891), 30.

[93]A. K. Fletcher, *Fall Creek!* (Groveland, Florida: A.K. Fletcher, 1989), 7.

two waterwheels to turn out about two hundred bushels of flour every day with eight employees.[94] Business ended in 1926 when Cornell University purchased the site and demolished the mill.[95]

Further up the slope closer to the falls, the county's first paper mill was built in 1819 by Otis Eddy and Thomas S. Matthewson on a 66 foot by 82-foot plot purchased from Phineas Bennett.[96] Eddy retired in 1820 and sold his interest to Chester Walbridge who continued to run the business with Matthewson until 1822 at which time he turned his share over to James Trench,[97] who managed the part of the mill devoted to the production of wrapping paper.[98] The manufacture of brown wrapping paper and writing and printing papers respectively were separated into two mills under separate management until 1845 when the ownership of both mills passed to Ebenezer Mack and William Andrus.[99] The wrapping paper mill passed through several proprietors, finally being passed to the owners, Enz & Miller in 1887[100], under which it was named the Ithaca Falls Paper Company[101]. These buildings were two and three stories in height and covered a one-acre site. The so-called white mill fabricated the printing and writing papers, but burned in 1846, prompting its new owners to build a mill further upstream in Free Hollow.[102] However in 1851 they rebuilt the brick mill on Fall Creek, forsaking

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[94]Humber, 41.

[95]Ibid.

[96]Ibid.

[97]Selkreg, 124.

[98]Ibid., 173.

[99]Selkreg, 173.

[100]Ibid.

[101]*Ithaca, New York* [map]. 1888. 1:50. "Digital Sanborn maps 1867-1970". Cornell University Library. http://resolver.library.cornell.edu/misc/4455183.

[102]Humber, 41-43.

the Free Hollow establishment.[103] S. H. Laney took over management of the paper mill, renaming it the Ithaca Paper Company in 1890, which now employed around 30 people and produced eight tons of paper per diem.[104] The Ithaca Paper Company produced paper from its inception in 1819 to 1954, employing about thirty people by 1835,[105] and manufacturing 20,000 dollars worth of paper annually.[106] The mill would exchange hands several more times, with controlling interests held outside of Ithaca, before terminating the business in 1954.[107]

A foundry known as the Ithaca Furnace was founded in 1828 and, after the completion of Cornell's tunnel, was located at the foot of its stream.[108] Under the proprietors Dennis & Vail,[109] the metalworks generated products in demand for a country in time of great industrial growth.[110] Silas Mead used the factory as well in the 1830s in assembling plows, while H. King owned another furnace nearby.[111]

Located on the bluff above the metalworks and west of where the Gun Company would stand was the Ithaca Agricultural Works, established in 1867 as a small-scale enterprise manufacturing farm equipment.[112] In its first four years the business grew to a complex of five buildings, producing three models of self-dumping rakes with two

[103]Ibid., 43.

[104]Ibid.

[105]Ibid.

[106]Selkreg, 133.

[107]Humber, 43.

[108]Selkreg, 133.

[109]Ibid.

[110]Humber, 43.

[111]Ibid.

[112]D. Morris Kurtz, *Ithaca and its resources : being an historical and descriptive sketch of the "Forest City" and its magnificent scenery, glens, falls, ravines, Cornell University, and the principal manufacturing and commercial interests* (Ithaca, New York: Journal Association Book and Job Print, 1883), 76.

different styles of teeth.[113] The venture folded in 1879 after struggling in the wake of the panic of 1873 and was bought by J. W. Hollenback who renamed the business the Ithaca Manufacturing Works.[114] The business employed between 20 and 30 workers, producing about 2,000 each of rakes and cultivators each year to be distributed both state and nationwide.[115] A two-story brick building, 51 Lake Street, housed the business office and storeroom.[116] Closer to Lake Street was the woodworking shop where the rake frames were constructed, which passed along an overhead ramp to the blacksmith's shop, which attached the iron components.[117] Located just below Cornell's tunnel was the foundry where iron castings were made, possibly on the former site of the Ithaca Furnace some thirty years prior to the business's inception.[118] A 117-foot long bridge, measuring 30 feet by 60 feet, connected the foundry to the shops and smaller buildings, all of which were linked by a narrow-gauge railway system.[119] However successful the Manufacturing Works proved to be through the decades it was in operation, in 1883 it succumbed to the competition of larger international farm machinery conglomerates, resulting in the close of another industrial institution.[120]

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[113]Humber, 43.

[114]Abt, 119.

[115]Kurtz, 77.

[116]Ibid.

[117]Humber, 43.

[118]Ibid.

[119]Kurtz, 79.

[120]Abt, 119.

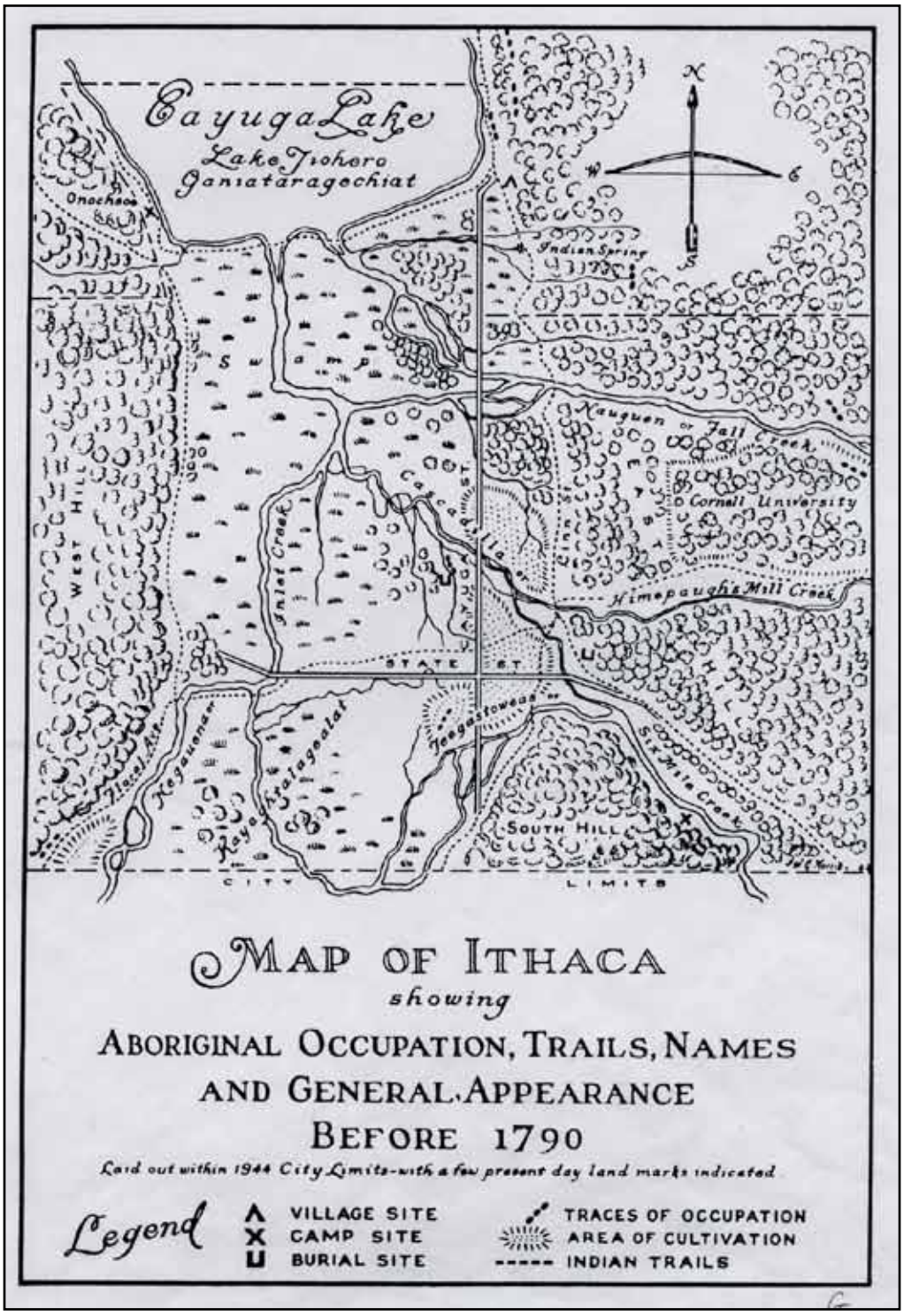

Fig. 4. Glenn, Norris W, *Map of Ithaca : showing aboriginal occupation, trails, names and general appearance before 1790 : laid out within 1944 city limits with a few present day land marks indicated,* [map], Scale not given, (Ithaca, N.Y.: DeWitt Historical Society of Tompkins County, 1944).

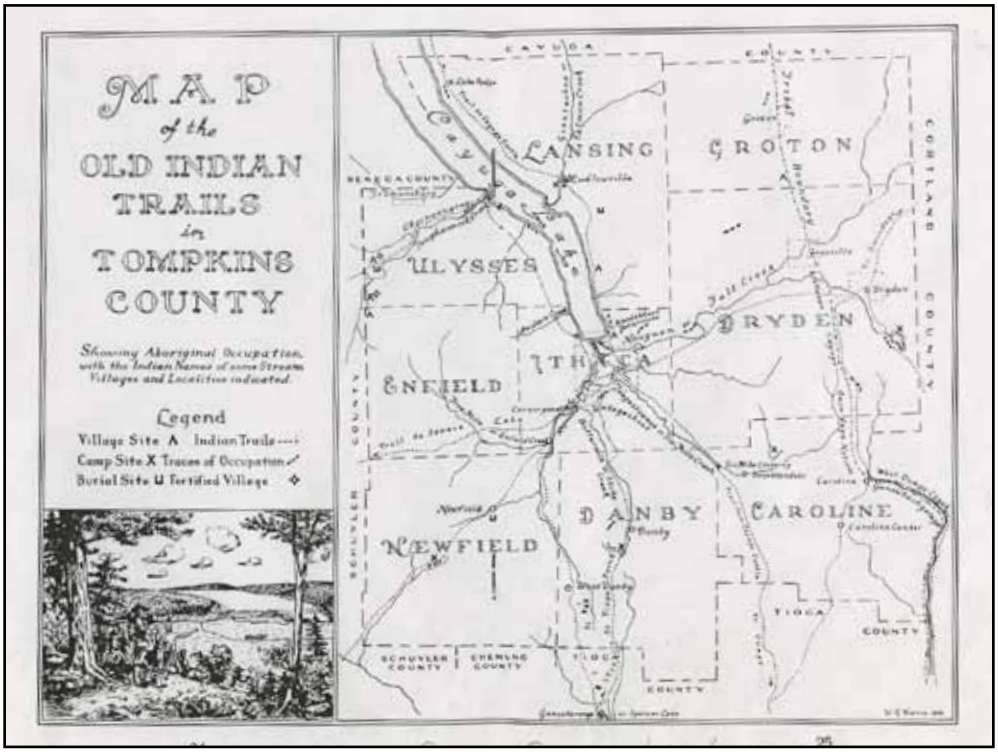

Fig. 5. Glenn, Norris W., *Map of the old Indian trails in Tompkins County*, [map], Scale not given, (Ithaca, N.Y.: DeWitt Historical Society of Tompkins County, 1969).

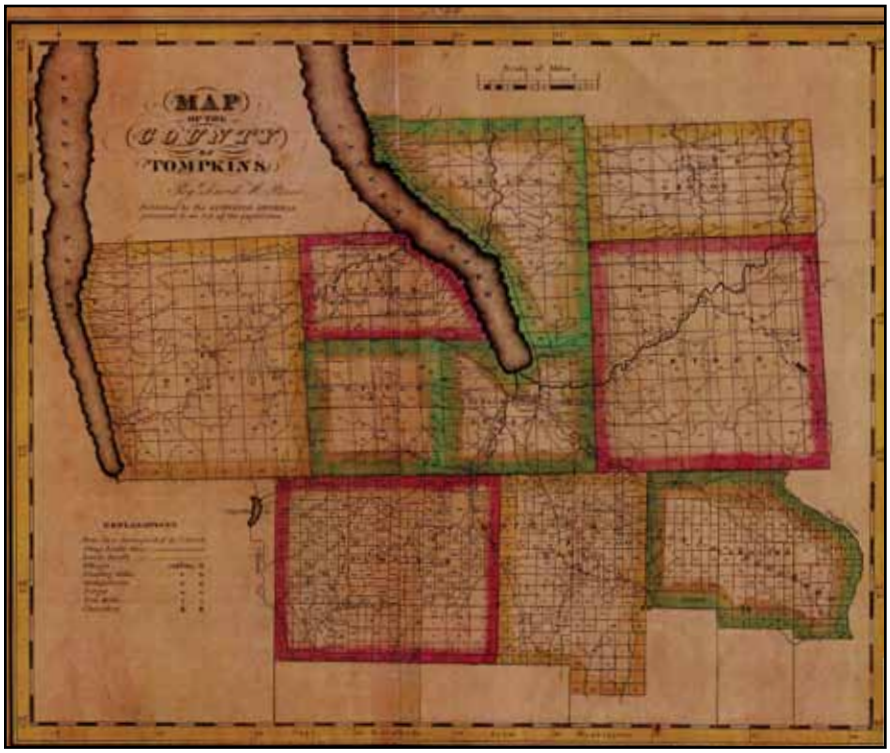

Fig. 6. David H. Burr, *Map of the County of Tompkins,* [map], 1:151,000, (New York, N.Y.: U.S. Surveyor General, 1829).

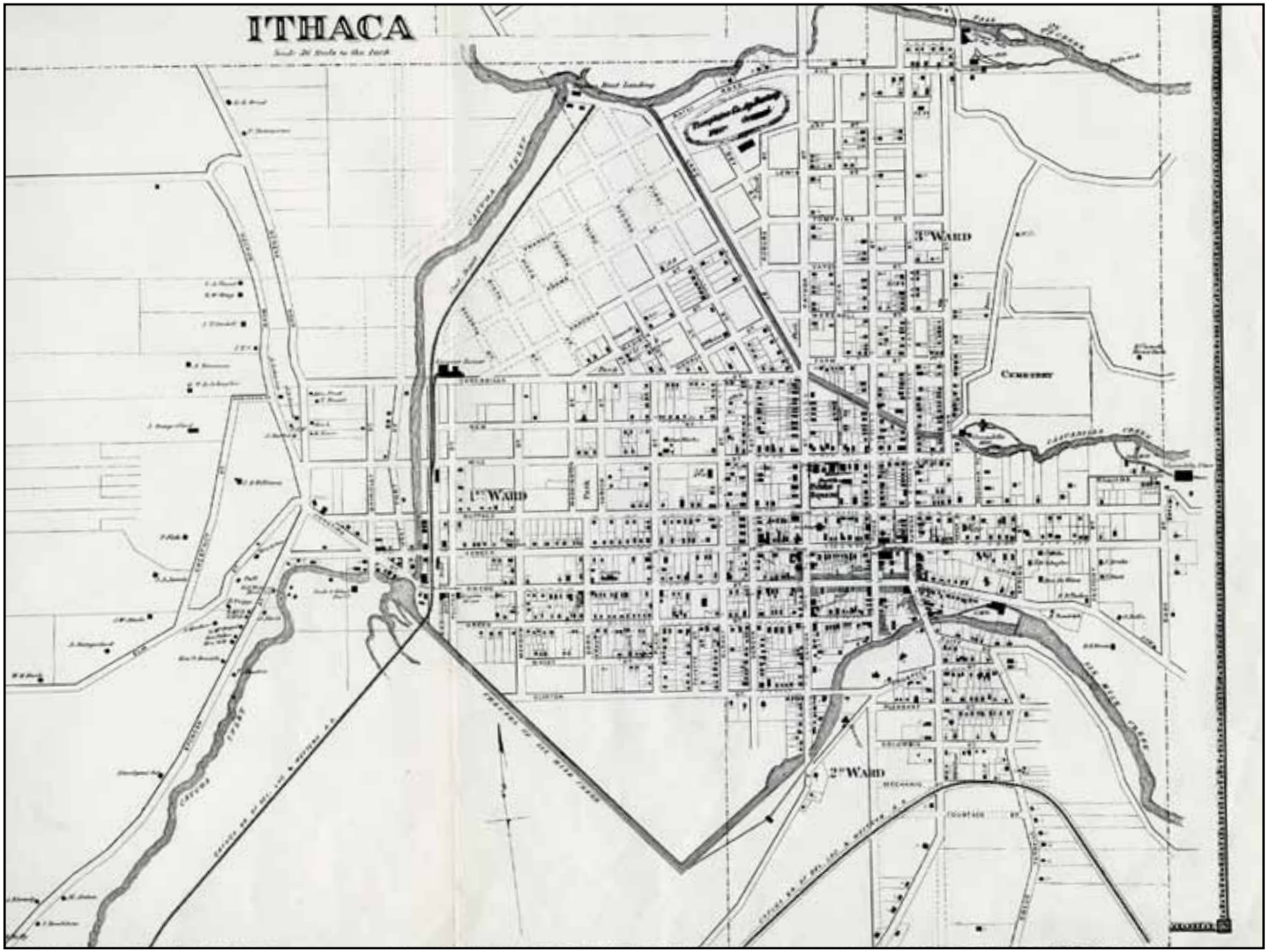

Fig. 7. *Ithaca* [map], 36 rods to the inch, In: Stone & Stewart, "New topographical atlas of Tompkins County, New York," (Philadelphia, 1866).

Fig. 8. *Bird's eye view of Ithaca, N.Y. 1873* [map], No scale given, (Ithaca, N.Y.: Wilcox Press, 1938).

Fig. 9. Lucien R. Burleigh, *Ithaca, N.Y. 1882,* [map], Scale not given, (Ithaca, N.Y.: Historic Urban Plans, 1970).

Fig. 10. Bird's eye view showing the Ithaca Gun Co., Ithaca Paper Co., and raceway. (aerial_then : historical files)

Fig. 11. Bird's eye view of Ithaca Falls and raceway at peak water flow. (84.72 : Dewitt_Final)

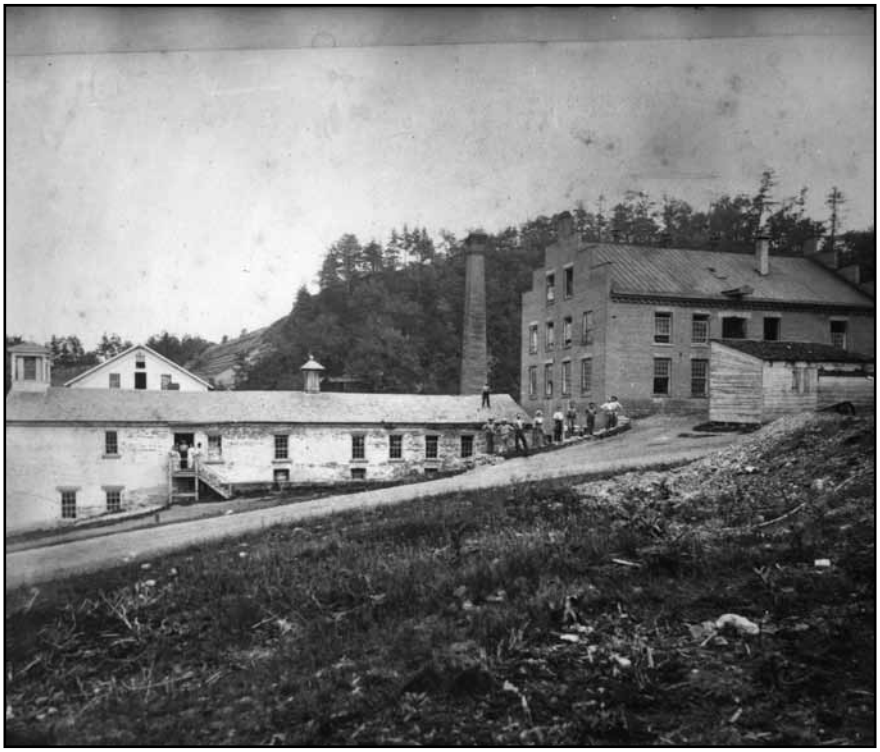

Fig. 12. View looking north of the Ithaca paper Company. (R20.156 : Dewit_ Final)

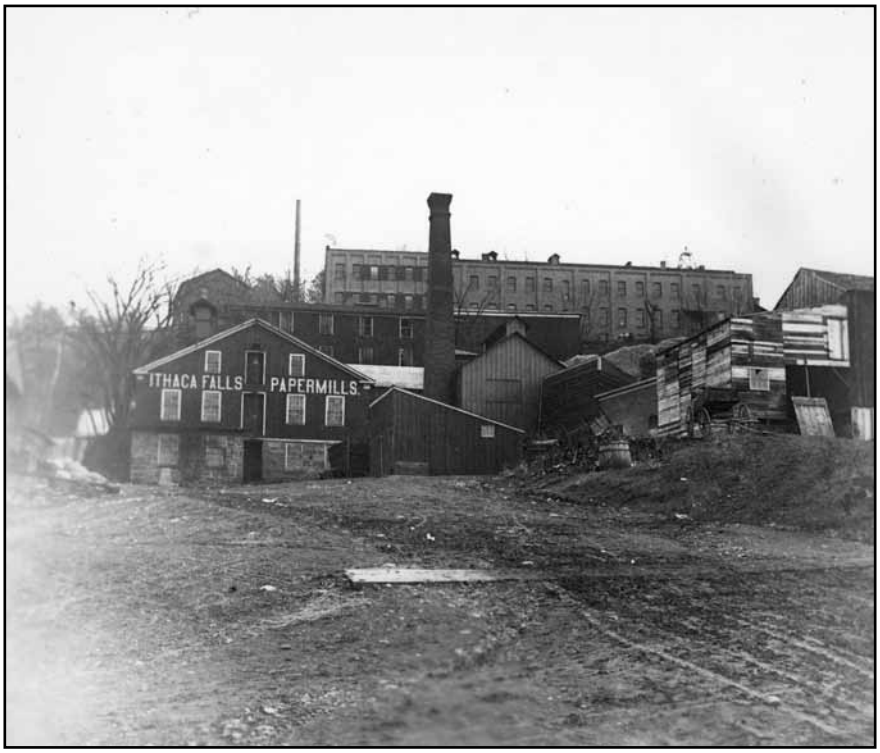

Fig. 13. View of Ithaca Falls Paper Mill from Lake Street with the Ithaca Gun factory in the background. (R20.154 : Dewit_Final)

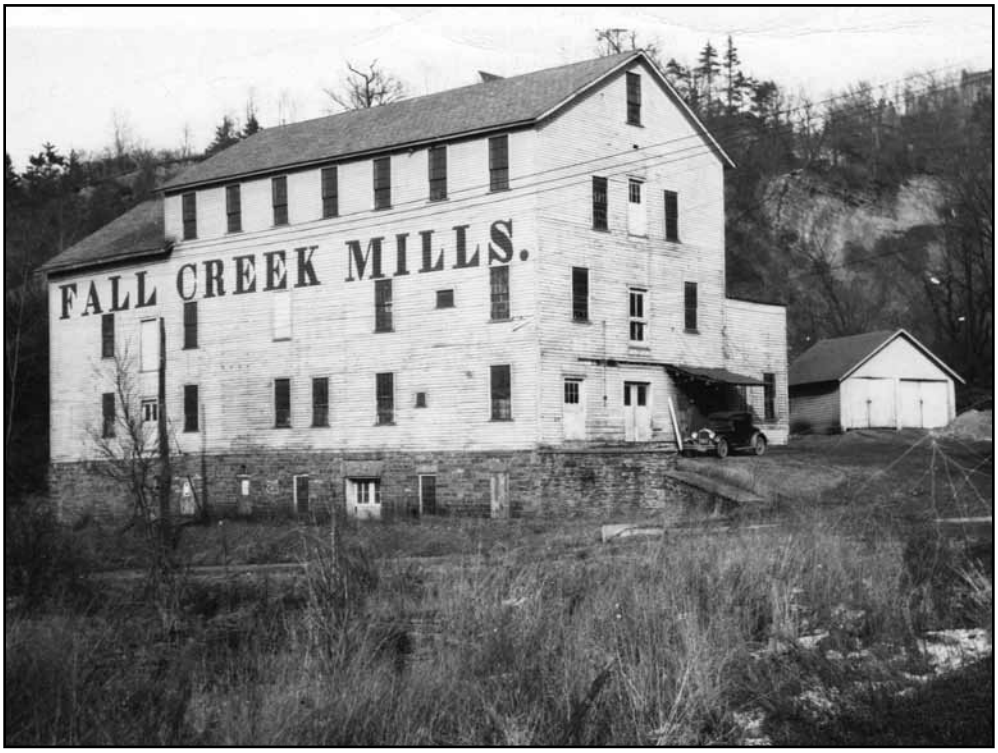

Fig. 14. View facing northeast of the Fall Creek flourmill (R20.137 : Dewitt_Final)


Fig. 15. View looking north from Lake Street towards the Ithaca Falls Paper Mill. (R20.101 : Dewitt_Final)

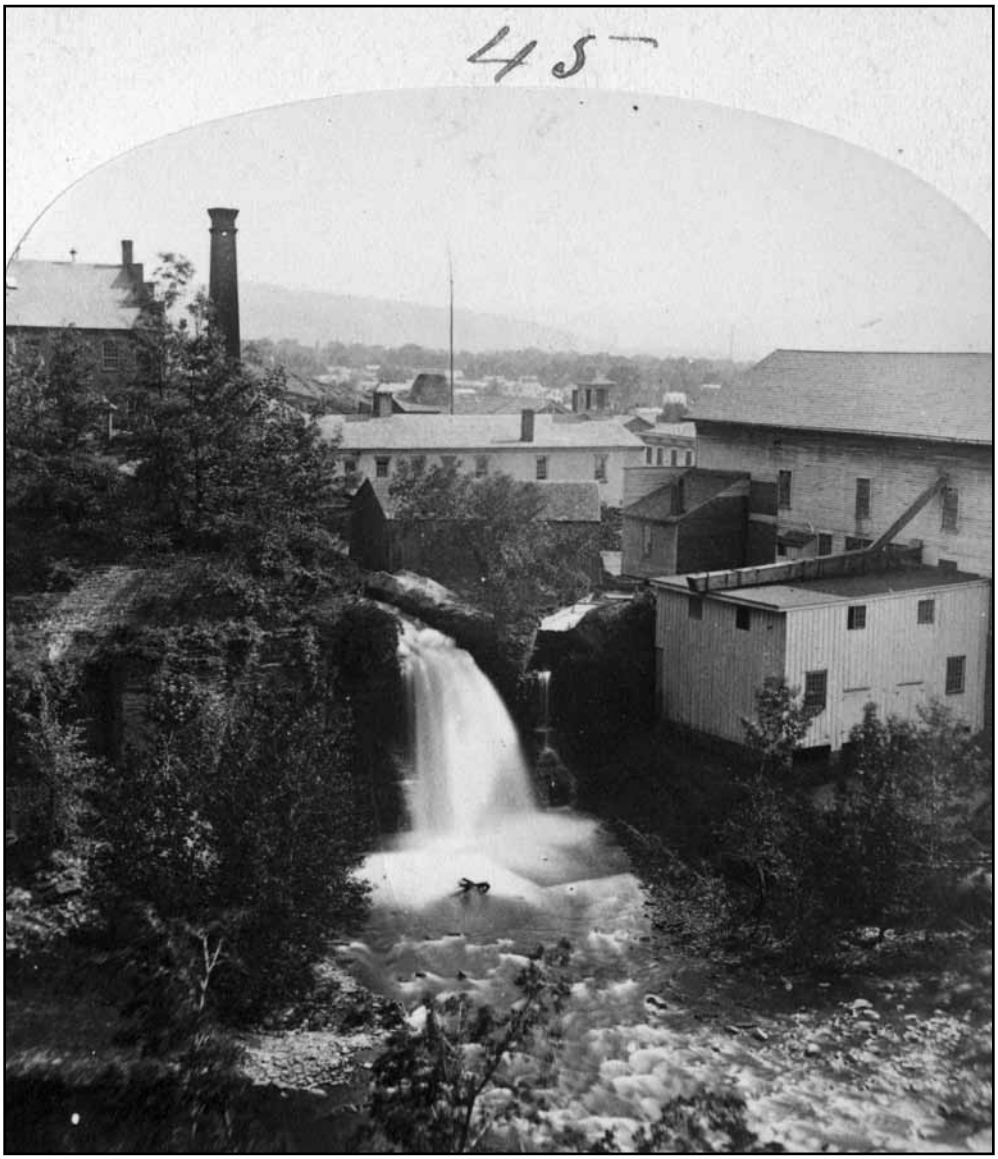

Fig. 16. View looking south from the northern gorge ridge of the Fall Creek flour mill and end of raceway. (K5.75_45 : Dewitt Final)

Fig. 17. View east along wooden flume towards tunnel. (R20.18 : Dewitt_Final)

Fig. 18. View from western tunnel mouth. (Tunnel downstream : Historical_Files)

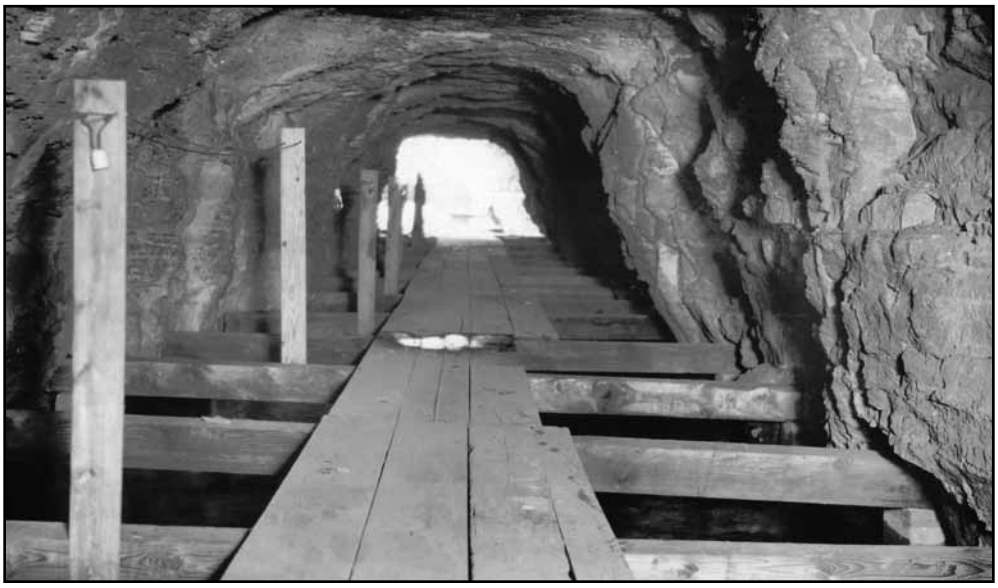

Fig. 19. View of wooden flume through tunnel. (R20.5 : Dewitt Final)

Fig. 20. Sightseers at the eastern mouth of the tunnel. (Tunnel_then : Historical files)

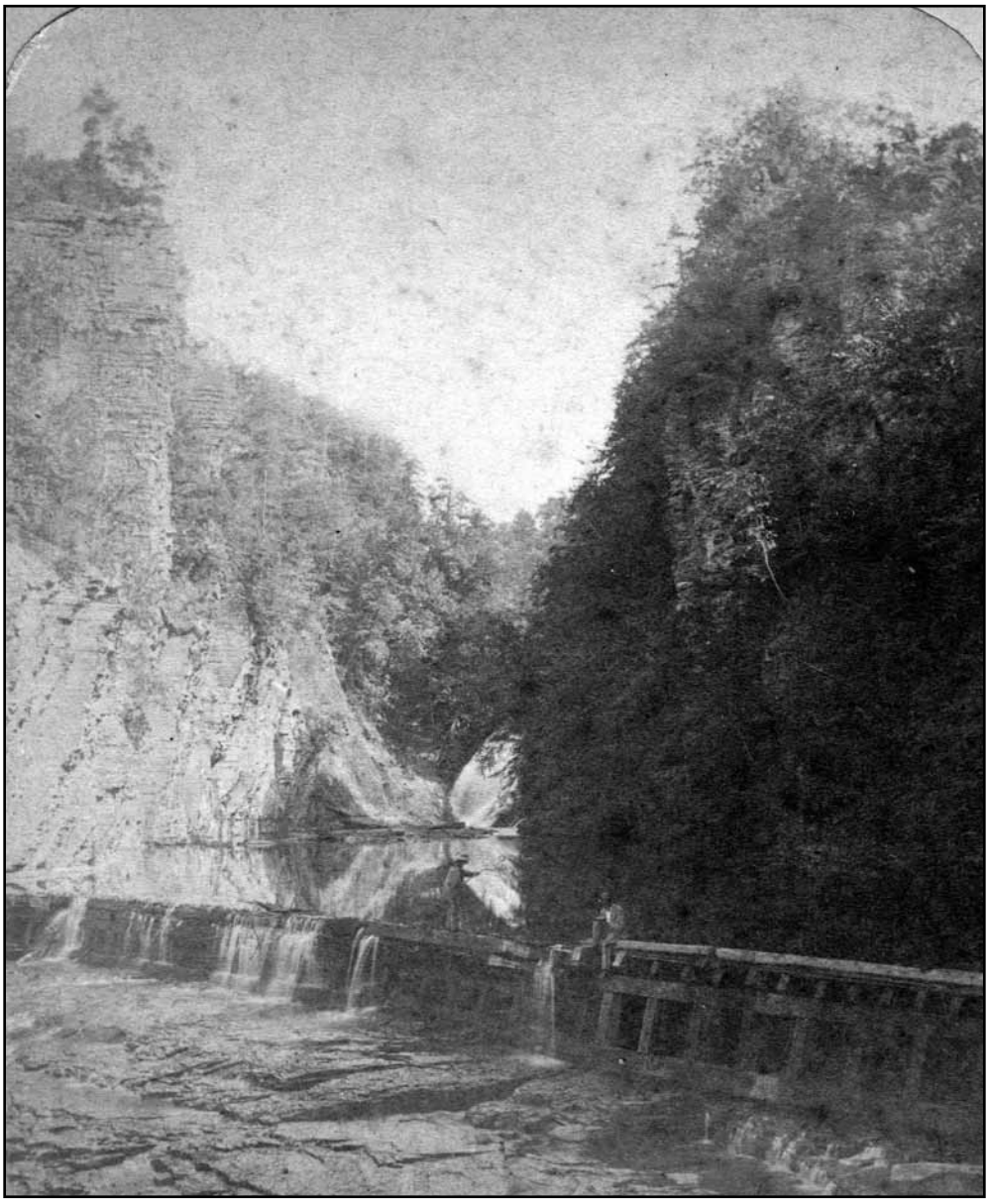

Fig. 21. Original dam and wooden chute above tunnel mouth. (Little_dam : Historical files)

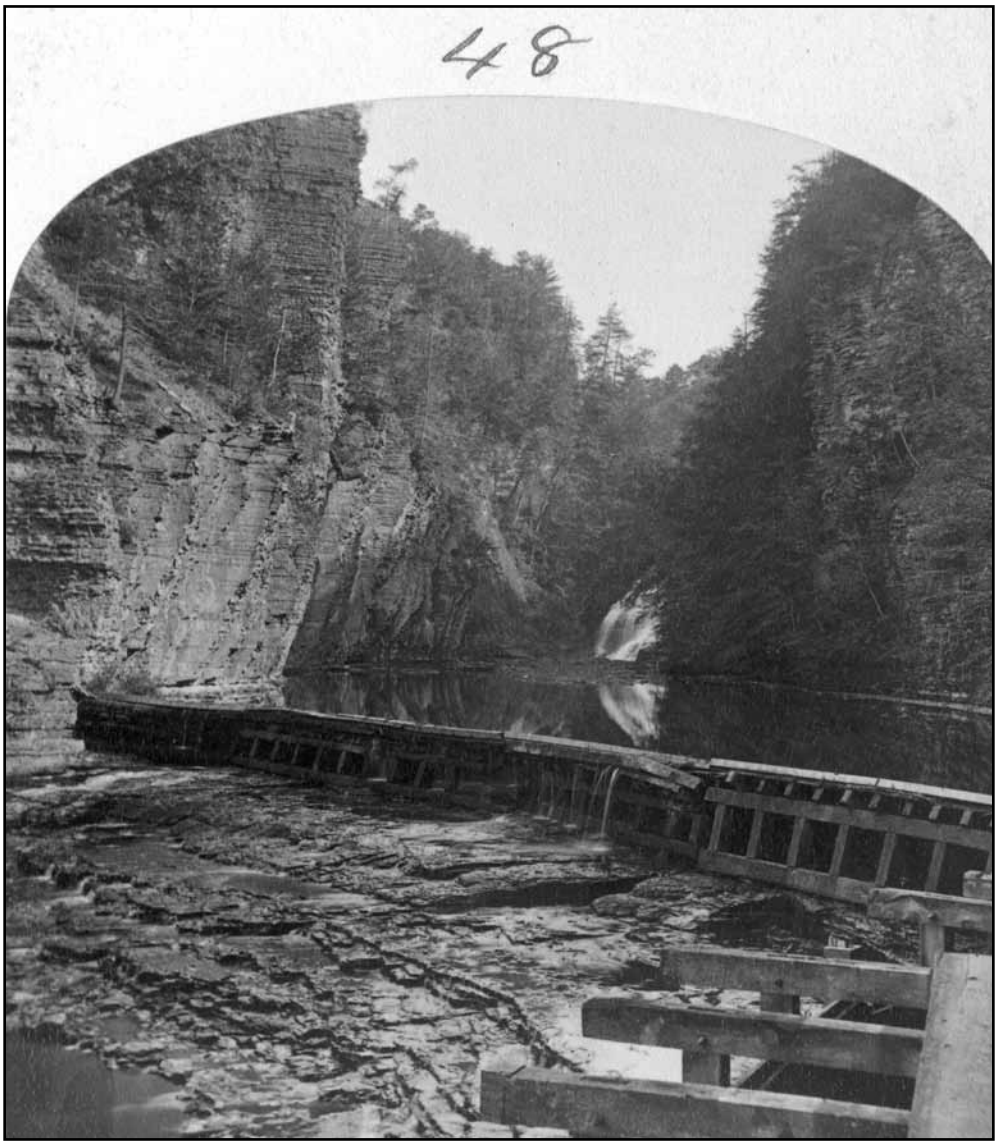

Fig. 22 View from flume of original dam. (K5.75_48 : Dewitt Final)

Fig. 23. Orginal dam and wooden flume carrying water through tunnel. (Looking_down_fr_ Chimney_Rocks : Historical files)

CHAPTER 4.

EARLY TOURISM AT ITHACA FALLS

Aside from their industrial significance, Fall Creek and Ithaca Falls functioned in an entirely different capacity, attracting visitors to the area and helping to establish the city as a tourist destination. Fall Creek, one of three ravines to flow through Ithaca's center, is historically portrayed as the most remarkable of these,[121] providing an array of natural features over a short span. Part of the intrigue of the Fall Creek Gorge was, and still is, its startling location within what was then known as the Town of Ithaca. One of the great waterfalls in New York State, historically referred to as the second largest cataract after Niagara Falls is seemingly hidden by high valley walls, tucked away behind adjacent industries, yet located only three quarters of a mile from the town center. The relation between industry, growth, and tourism was a symbiotic one; as Fall Creek became more developed, its paths became more negotiable to would be revelers. Numerous guidebooks from the nineteenth century lauded the gorge as a scenic wonder, inviting casual and adventurous sightseers alike to navigate along the Fall Creek corridor.

Beginning from the Lake Street Bridge, several paths were described in the early guides following Fall Creek against its flow upstream to its climax at Ithaca Falls. The bridge, which is referred to as spanning Aurora Street but has been inferred as the iron bridge recorded on Lake Street as no evidence of another bridge was found in the course of researching the site's history, acted as a starting point from which one might take in the falls and understand it in context. To the south mills bordered the creek and the flume, at the height of its working order, mimicked the stream of water in its own cascade down the hillside. Further up the slope, vegetation obscured the view of buildings near the origins of the flume. On the northern bank, the wooded hillside sloped steeply up

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[121]Charles H Thurber and Geo M Marshall, *In and out of Ithaca: a description of the village, the surrounding scenery and Cornell University* (Ithaca, N.Y.: Andrus & Church, 1887) 72.

from street level, opening up halfway to the falls into an amphitheatre formed by the rounded cliffs extending to the falls. Steep banks on either side of the creek enhance the drama of the scene, rising to great heights above the falls. In Frank Clarke's guidebook from 1869, measurements taken at the first cascade on Fall Creek, Ithaca Falls, record the falls to pass through a channel 85 feet in width before dropping from a height of 156 feet to the basin below.[122] The falls themselves flow over a series of shelves formed by perpendicular angles in the rock rather than a sheer drop at a collective angle of about seventy degrees.[123] Water levels change with the seasons; spring freshets charge over the falls with overwhelming force, while summer time droughts leave the cliffs scalable by a spirited climber.

At present, the falls are reachable via the park entrance on the south side of the bridge. Historically, that space was occupied by the Fall Creek Milling operation. A "crevice in the rocks" is described to the north of the bridge as a means to descend to the water's edge.[124] From the bridge, one could walk either on the north or south banks reachable by the aforementioned path, or the ridge of the cliffs on either side. While the trail on the northern ridge is described in detail by several guidebooks as the tourist gorge walk, the path along the south ridge was the most frequented according to Clarke. One would either follow University Road past the Cemetery to the mill closest to the top of the flume, possibly the Ithaca Manufacturing Co., or else take an unromantic route from the bridge through the mill yards to the same point at the top of the flume. No defined path is described for traversing the mill yards, although it is portrayed as being a toilsome route, where the alternative is clearly preferable.

From the point at the top of the flume below the mouth of Ezra Cornell's tunnel,

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[122]Frank Wigglesworth Clarke, *Views around Ithaca: being a description of the waterfalls and ravines of this remarkable locality* (Ithaca, N.Y.: Andrus, McChain & Co., 1869) 153.

[123]Ibid., 13.

[124]Ibid.

a small bridge crossed the raceway to the island between the cliffs of the gorge and the sluice.[125] This bridge may have been at the location where the bridge from Ithaca Gun would later span the headrace, as it placed the viewer at a point on a "projecting, platform-like point" on the island in front of the falls, directly across from the rock amphitheatre of the cliffs on the southern side of the gorge.[126] The bridge that led to the foundry on the lower island would have been too far west to fit the descriptions in the guidebooks. Similarly, the small wooden bridge located almost directly above the mouth of the tunnel would have been too far east. The position on the island, called "Prospect Point", offered a tremendous view of the falls, altogether greater than those on the lower slopes, enhanced by the height of the viewer's place on the precipice. Again at the bridge, one would follow the raised wooden walkway that extended from the headrace through the tunnel. Just before the mouth of the tunnel, a lateral cut in the gorge wall, used to carry the flume prior to the construction of the tunnel and raceway, leads to a precarious point over the falls from which points along the outer cliffs might be explored.[127] Through the tunnel, the earliest constructed dam would be visible ahead with the "box-like channel of the flume" extending towards it.[128] At the end of the view, the second, or Forest Fall would be discernable, foaming between the steep cliffs of the gorge. A moderate descent to the creek bed from the opening of the tunnel brought the visitor to the top of the falls, opening up a grand vista of the town, lake, and hills beyond. Back through the tunnel, the walk continues up the south bank of the raceway, following a footpath over the tunnel to a platform directly over the falls.[129] A point above this, located over the head of the tunnel, presents a view similar, though less impressive, to that of the one immediately

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[125]Ibid., 14.

[126]Ibid.

[127]Ibid., 15.

[128]Ibid.

[129]Ibid., 16.

below it upstream to Forest Falls.[130] Next along the path, an open, level grassy spot with views above the dam and the crest of Ithaca Falls with Cayuga Lake in the distance might suggest the Quaker Overlook of today.[131] From here, the path deviates from the uneven edge of the southern cliffs, returning to the crag at a point above Forest Falls.[132] From the second cataract the trail follows the creek past the third, fourth, and fifth falls to its terminus at Triphammer Falls, only a mile's walk back to town.[133]

Revisiting the starting point from the Lake Street Bridge, a second route for visiting Fall Creek begins along the northern slopes. Around the time of Clarke's publication in 1869, or "since this chapter was in type", a group of Ithacans cleared and graded a path up the northern ridge of the gorge in order to render the scenery accessible.[134] It was previously unavailable to all those but the most daring climber equipped with rope and ladder.[135] Starting from the "Lookout", where tourists could dismount from their carriages onto a platform at the northern end of the bridge, a tollgate ushers the sight seeker up a footpath leading them to the first picturesque view along the trail.[136] The "Rest", a landing a short way above the creek offered a full view of the falls ahead, enhanced by the tunnel effect of the gorge leaving the buildings out of sight.[137] A steep ascent up the slope brought the traveler to the top of the ridge, from which vistas of the lake were visible.[138] The next point, the "Point of Rocks", was an outcropping

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[130]Ibid.

[131]Ibid.

[132]Ibid., 16-17.

[133]Ibid., 22.

[134]Ibid., 13-14.

[135]Thurber, 73.

[136]Clarke, 139.

[137]Ibid., 140.

[138]Ibid.

fifty feet above the water below.[139] From there, one would follow the perpendicular cliffs around the vast, shaded amphitheatre towering three hundred feet from the stream bed,[140] halfway around which a profile view of the falls is afforded, called the "Picture Frame" as it's positioned between tall linden and elms.[141] A few steps beyond this, a small "Rock Spring", flows from the gorge wall beside the path.[142] At the end of the amphitheatre, a stairway hewn from the rock called the "Gate Staircase" leads to the moss covered "Plateau" with young hemlock and deciduous saplings, level with the brink of the falls, which are accessible from this point.[143] A stand was erected in that time to keep picnic refreshments.[144] A switchback, a steep ascent cut into the face of the cliff with rough-hewn staircases in parts, brings the walk along the precipice of the gorge past the falls known as the "Palisades" for its resemblance to the cliffs on the Hudson.[145] The path continues precariously along a corridor in the cliff-side, wide enough only for one person, and comes upon an infamous spot, named "Johnson's Tumble", for John Johnson who was working on the trail in August of 1869 and fell almost 150 feet, miraculously escaping any life-threatening injury.[146] Another long stairway cut from the rock brings the tourist to the "Cliff Walk", having climbed a total of 300 feet from the starting point and continuing along the edge of the rock face with birds-eye views of the path thus far.[147] The trail winds its way through Fall Creek to Beebe Dam and the village of Free Hollow,

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[139]Ibid.

[140]Spencer Spence, *The scenery of Ithaca and the head waters of the Cayuga Lake* (Ithaca, N.Y.: S. Spencer, 1866) 16.

[141]Clarke, 140-141.

[142]Ibid., 141.

[143]Ibid.

[144]Ibid., 141.

[145]Thurber, 75.

[146]Clarke, 142.

[147]Ibid., 143.

where visitors were encouraged to make arrangements with their carriages to pick them up where University Road met with the footbridge crossing Beebe Dam.[148]

Remnants of both trails are visible today. The Lake Street Bridge still serves as the first point from which visitors, or passing motorists, take in a clear and stunning view of the falls. From the northern end of the bridge, it is only with pre-existing knowledge of such a trail that one might find the beginnings of it behind a property set back form the road. While a structure existed in that spot historically, no indicators of the gateway described in the guidebooks are currently discernable. Nor is there evidence of a passage down the northern bank to the floodplain of the creek. However, after some initial searching, a worn footpath brings the modern tourist to the first two vantage points on the route, mentioned historically as “The Rest” and “The Point of Rocks”. However visible the way might be, it is not advisable for the faint of heart to attempt. The “Point of Rocks” is accessible only with the aid of rope, ostensibly installed by a good samaritan equipped with nerves of steel. A chain link fence marking the boundary of the properties abutting the gorge now blocks the path rounding the amphitheatre. Along the southern ridge, access from the bridge through what was once occupied by the mill yards is no longer passable due to heavy revegetation and regrading of the slope. In spite of this, with entry through the Quaker Overlook, the trail through the tunnel is still traversable. The later construction of the dam across Fall Creek further downstream changes the landscape viewed from its entrance onto the creek. Further evaluation of the remaining features described by these historical sources is discussed in the chapter on constructed water features in the section on existing conditions.

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[148]Ibid., 14.

Fig. 24. Historical view of Ithaca Falls from Lake Street Bridge. (K5.75_44 : Dewitt Final)

Fig. 25. Current view of Ithaca Falls from Lake Street Bridge. (Photograph by author).

Fig. 26. Path along base of the north gorge walk. (Photogaph by author).

Fig. 27. Current view from “The Rest.” (Photograph by author).

Fig. 28. Ascending path of the north gorge walk. (Photograph by author).

Fig. 29. Current view from “The Point of Rocks.” (Photograph by author).

CHAPTER 5.

EARLY HISTORY OF THE ITHACA GUN COMPANY

The Ithaca Gun Company was the first of the large enterprises to be established along Fall Creek. It was founded in its earliest iteration by William Henry Baker, Dwight McIntyre, and John E. VanNatta in 1883.[149] The former was a well-known gun inventor who was working at the time to craft a mass-producible, economically priced firearm that retained the qualities of higher priced premium models.[150] McIntyre and VanNatta, both of Ithaca, expressed an interest in Baker's invention, patenting the gun with Baker and forming a partnership to found the Ithaca Gun Works.[151] Their Fall Creek property was originally the site of the Fall Creek Hub and Spoke Factory,[152] owned for a time by Byron C. Howell on the hill above the Ithaca Manufacturing Works.[153] The water power on Fall Creek had been allotted into 100 foot wide parcels with twenty-three feet of water power a piece.[154] The founders purchased the property on Water Power Lot #6 for 6,000 dollars.[155] The site included a two story brick building, forty feet by fifty feet in dimension, with a thirty-foot by forty-foot storage ell, as well as an adjacent forge shop measuring twenty feet by thirty feet.[156] The deed included access to water rights as well as

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[149]Selkreg, 179.

[150]Ibid.

[151]Kurtz, 79.

[152]Humber, 43.

[153]Thomas W. Burns, *Initial Ithacans : comprising sketches and portraits of the forty-four presidents of the village of Ithaca (1821 to 1888) and the first eight mayors of the city of Ithaca (1888 to 1903)* (Ithaca, New York: Press of the Ithaca Journal, 1904), 153.

[154]Walter Claude Snyder, *The Ithaca Gun Company : from the beginning* (Spencerport, New York: Cook and Uline Publishing, 1991), 6. The work of this author on the comprehensive history of the Ithaca Gun Company represents the preeminate reference on the subject.

[155]Ibid.

[156]Kurtz, 79.

ownership of a flume and water wheel,[157] which were supplied by the raceway previously constructed under Ezra Cornell. The raceway was dammed in four places along its course, the first of which provided water for the flume that accessed the gunworks.[158] The earliest Sanborn map shows the property listed as the "W.H. Baker and Co. Gun Factory" at the eastern end of the set of buildings owned by the Manufacturing Works.[159] The original wooden frame building of the Hub and Spoke factory abutted the raceway where its stone foundation ran along its southern edge.[160] The new owners spent the summer after their purchase in February outfitting the building to adapt it to its new production.[161]

In 1886 the gunworks were listed as the Ithaca Gun Company with W. H. Baker, L. H. Smith, D. McIntyre, and George Livermore named as proprietors.[162] Leroy H. Smith, of Lisle, New York, previously founded the L. C. Smith Gun Company in Syracuse along with his brothers and Baker,[163] who supplied their company with its first shotgun design.[164] In 1887 the company shifted to the production of typewriters, discontinuing the manufacture of guns shortly after and forming the Smith-Premier Typewriter Company.[165] Baker left the Ithaca Gun Company and the town that same year and deeded his share to the other partners.[166] Smith and Livermore purchased the

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[157]Snyder, 1.

[158]*Ithaca, New York* [map]. 1888. 1:50. "Digital Sanborn maps 1867-1970". Cornell University Library. http://resolver.library.cornell.edu/misc/4455183.

[159]Ibid.

[160]Snyder, 7.

[161]Kurtz, 79.

[162]Humber, 44.

[163]*The L. C. Smith Collectors Association*, 2010, http://www.lcsmith.org/index.html.

[164]Humber, 44.

[165]Ibid.

[166]Snyder, 15.

adjoining Water Power Lot #7 shortly after from a lumber merchant, Henry Sage.[167] The sixth and seventh privileges now being owned by the gunworks provided forty and sixty horsepower respectively.[168]

As predicted, demand for the first Ithaca model was high, prompting the construction of a new brick building in 1890 to house the machine shop, measuring 36 feet by 165 feet and two stories high with a basement.[169] Smith and Livermore also purchased two adjacent parcels of land that year,[170] and a brick annex was built two years later.[171] In 1895, Smith and his brother-in-law George Livermore acquired controlling interests in the company from McIntyre and VanNatta, which was to remain in the family until the 1960s.[172] In 1901 a ninety foot addition was constructed, doubling the size of the plant to accommodate a large order solicited from the American Tobacco Company.[173] The final addition to the gun company's complex was a vast three-story structure built to the curb on Lake Street around 1917.[174]

At its outset the plant was capable of manufacturing up to 10 guns per day,[175] with a maximum yearly production of 3,100 guns.[176] By 1926, about 40 years after its inception, the factory produced as many as 52,000 guns annually.[177] This number

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[167]Ibid., 6.

[168]Kurtz, 79.

[169]Selkreg, 180.

[170]Snyder, 2.

[171]Abt, 150.

[172]Humber, 44.

[173]Snyder, 190.

[174]Ibid., 7.

[175]Kurtz, 79.

[176]Abt, 150

[177]Ibid.

accounted for more than half of the double hammerless guns sold across the country.[178] The number of employees reached an average of 350 in 1926,[179] up from the 70 men working in production in 1891.[180] By that time the company had absorbed several of its rivals, including the Syracuse Arms Company, the LeFever Arms Company, the Union Fire Arms Company, and the Wilkes-Barre Gun Company.[181]

The management of the company was to alternate between generations of the Smith and Livermore families, as determined by an informal contract between the two heads.[182] Around 1898, George Livermore's son, Paul Livermore, joined the company and was elected treasurer and later, vice-president.[183] Leroy Smith passed away in 1902.[184] His eldest son, Lou Smith, whose affable personality earned him widespread recognition, began working for the company as a teenager sometime before 1890.[185] He became the company salesman before his father's death, after which he was promoted to vice president of sales, under George Livermore acting as president.[186] Lou Smith's younger brother, Claude Smith, worked at the company for a short time as secretary starting in the early 1900s until his early death in 1928.[187] It was during his time at the family business that the Lefever Arms Company of Syracuse, New York, was incorporated in 1916 as a business strategy to market a lower-priced line of shotguns without tarnishing

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[178]Ibid., 150-151.

[179]Ibid., 151.

[180]Miller, 28.

[181]Abt, 151.

[182]Snyder, 20.

[183]Ibid.

[184]Ibid., 18.

[185]Ibid., 19.

[186]Ibid., 190.

[187]Ibid., 19.

the Ithaca Gun name, synonymous with quality.[188] Outside of his responsibilities to the gun company, Smith served twice as the mayor of Ithaca, beginning in 1922.[189] Lou's youngest son, Sheldon Monroe Smith, joined the company in 1934 and held a position in sales until becoming president in 1955.[190] Charles LeRoy Smith, Lou's oldest son came to the business in 1946 under Paul Livermore.[191] Livermore was the last of his family to control a management interest in the company, and the alternating management plans between the two families ended with his death in 1952.[192] Before Lou Smith's death in 1957, his participation in the company had waned, leaving Sheldon as president and Charles L. as acting vice president.[193] In the 1960s, the Smith brothers began to seriously consider offers made to purchase the family business, and in 1967 the company was purchased by a group of investors lead by Jerry Baldridge for 2,422,000 dollars and referred to as the Ithaca Holding Corporation.[194] At the time of the sale, the brothers cited the anti-gun movement coupled with a decrease in natural hunting grounds as a concern for the future of the sporting arms industry,[195] a concern that would fully manifest itself in the coming years.

In 1968 the company was still listed under the heading of the Ithaca Gun Company with Jerald T. Baldridge as chairman and secretary.[196] Members of the management team named by the Smith brothers, vice president of finance Raymond

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[188]Ibid., 97.

[189]Ibid., 192

[190]Ibid., 19.

[191]Ibid.

[192]Ibid., 23.

[193]Ibid.

[194]Ibid.

[195]Ibid.

[196]*Manning's Ithaca Directory*, Vol. 65 (Schenectady, N.Y.: H.A. Manning Company, 1968), 324.

VanHoutte and John Pitzer as vice president of sales[197] were listed as well, under the titles of president and sales manager respectively.[198] The Ithaca Holding Corporation was incorporated as General Recreation, Inc. by 1969 with the acquisition of several outdoor recreation companies beginning in that year.[199] The business fell into financial decline following the recession in 1975, closing the plant after filing for bankruptcy in December of 1978.[200]

Reasons for its failure included the ineffectual layout of the plant, the loss of familial interest, increased labor costs, and the diminished demand for firearms in general.[201] Local business leaders gained the funds necessary to reorganize and reopen the company the following year on June 20, 1979.[202] It wasn't until 1982 that the Ithaca Gun Company was again listed in the directory at the old address, 123 Lake Street.[203] By 1983 the company was back in financial trouble and in 1986 it was forced to close its doors for good, letting go of 100 of the company's last employees. In 1987, the Remington Arms Corporation acquired patent rights to one of the models, while a local developer bought the real estate.[204] The Neill family purchased the remaining assets, renaming it the Ithaca Acquisition Corporation.[205] In 1987 Eric and Stephen Neill were listed as owners of the company[206] and continued production at the factory until relocat (Manning's Ithaca

[197]Snyder, 23.

[198]*Manning's Ithaca directory* (1968), 324.

[199]Snyder, 23.

[200]Ibid., 24.

[201]Humber, 44.

[202]Snyder, 24.

[203]*Manning's Ithaca Directory*, Vol. 78 (Bellows Falls, VT.: H.A. Manning Co., Publishers, 1982), 156.

[204]Snyder, 24.

[205]Ibid.

[206]*Ithaca, New York: City Directory* (Loveland, CO. : U.S. West Marketing Resources: Johnson Directory Division, 1987), 98.

Directory 1968)ing to King Ferry, New York in 1989.[207] They too experienced financial difficulties and in 1995 the company filed for bankruptcy.[208] In 1996, Kenneth Walker lead a group of investors in purchasing the assets to the Ithaca Acquisition Corporation, returning the company's name to The Ithaca Gun Company, LLC, and continuing the production of Ithaca Guns, in Ohio outside of its hometown.[209]

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[207]Snyder, 24.

[208]Ibid.

[209]Ibid.

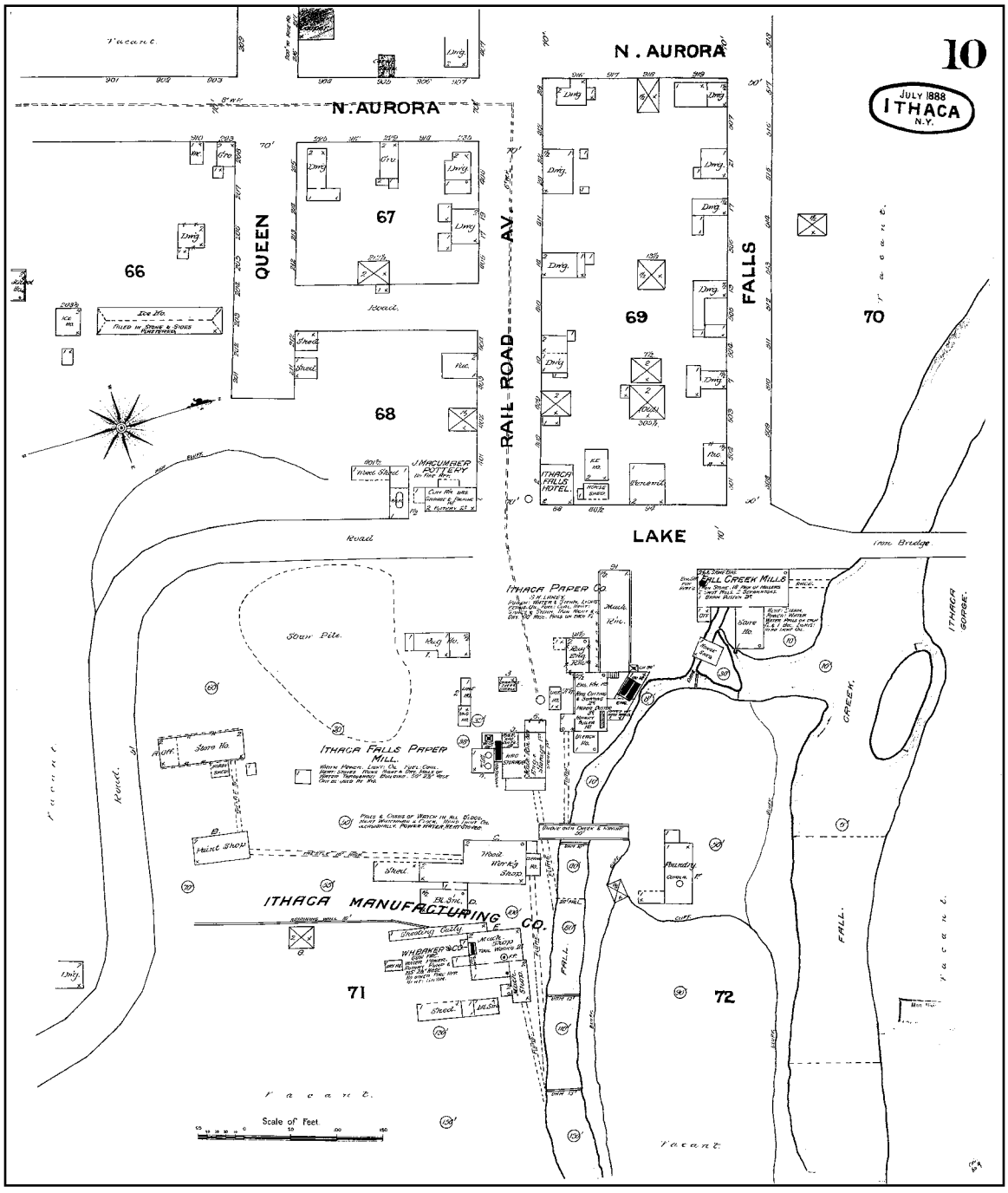

Fig. 30. *Ithaca, New York* [map], 1888, Scale not given, "Digital Sanborn maps 1867-1970," Cornell University Library. http://resolver.library.cornell.edu/misc/4455183.

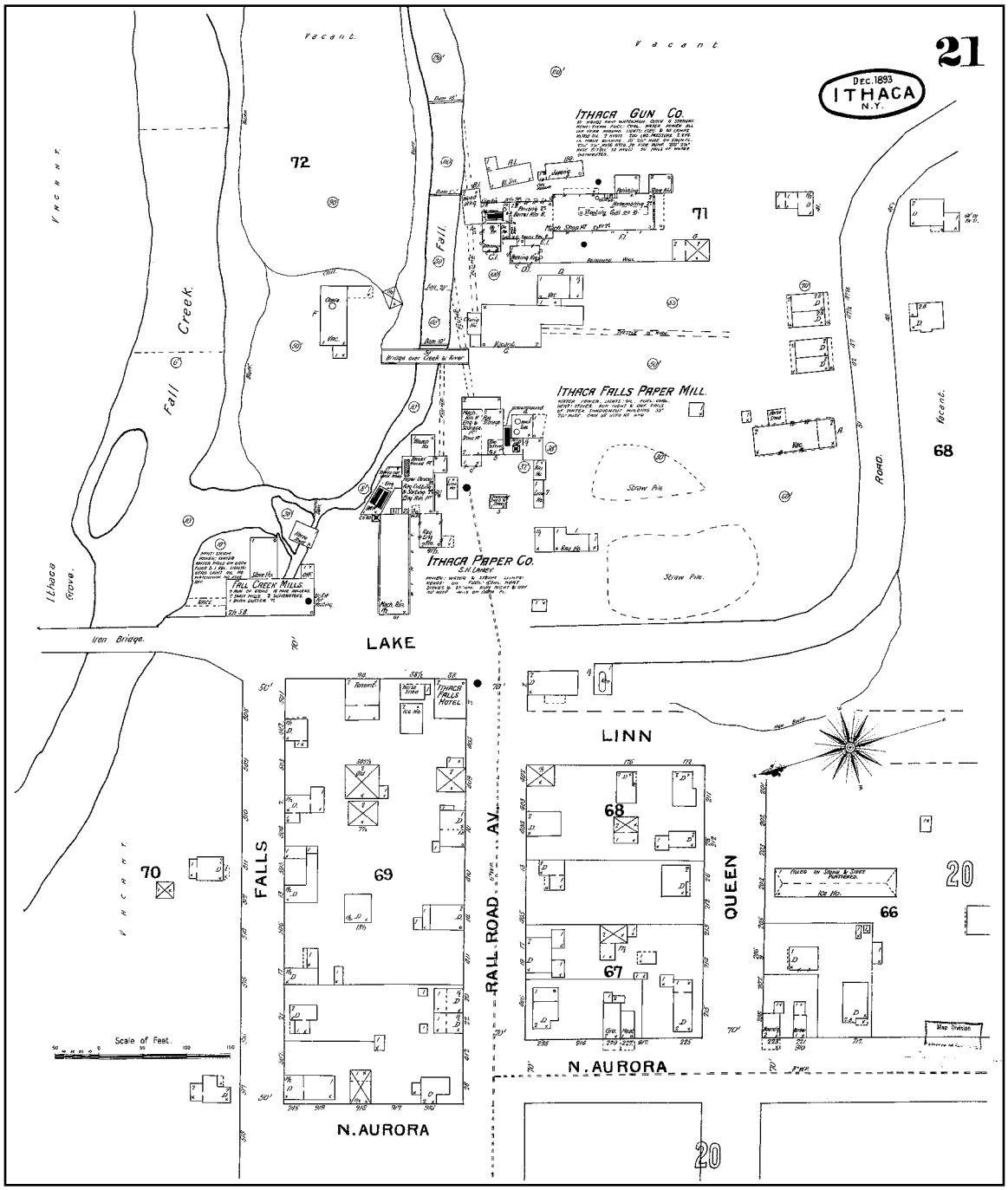

Fig. 31.*Ithaca, New York* [map], 1893, Scale not given, "Digital Sanborn maps 1867-1970," Cornell University Library. http://resolver.library.cornell.edu/misc/4455183.

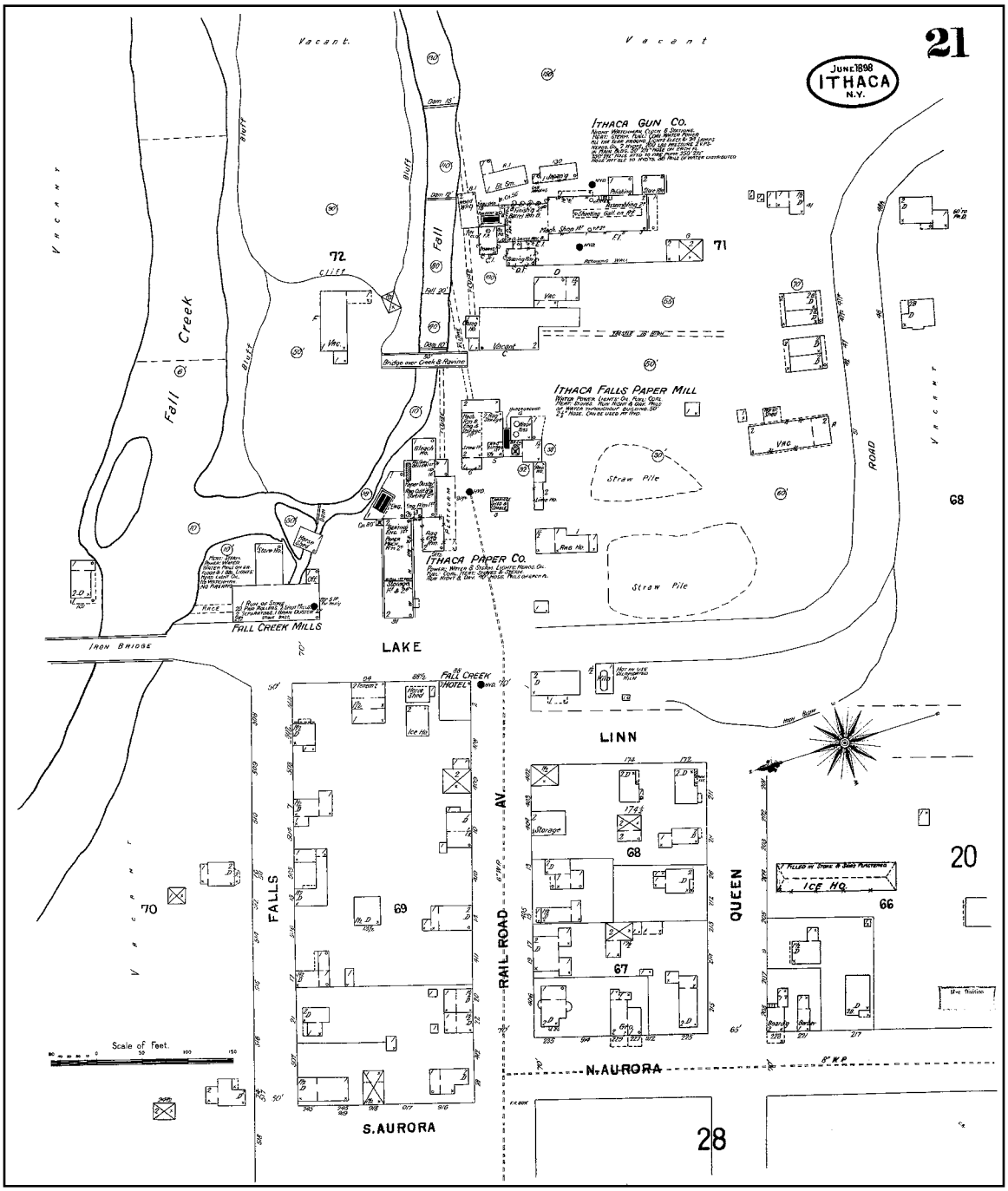

Fig. 32. *Ithaca, New York* [map], 1898, Scale not given, "Digital Sanborn maps 1867-1970," Cornell University Library. http://resolver.library.cornell.edu/misc/4455183.

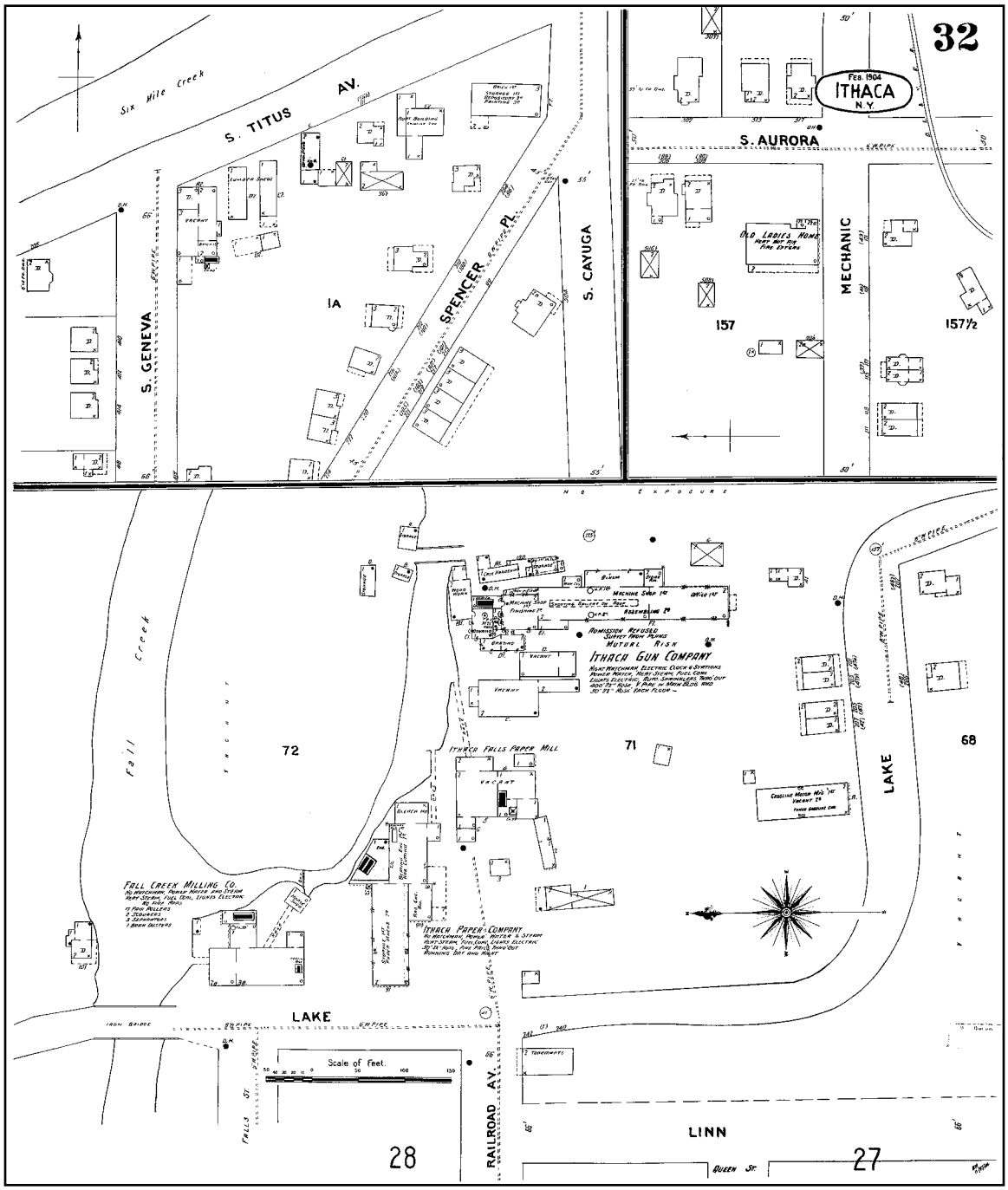

Fig. 33. *Ithaca, New York* [map], 1904, Scale not given, "Digital Sanborn maps 1867-1970," Cornell University Library. http://resolver.library.cornell.edu/misc/4455183.

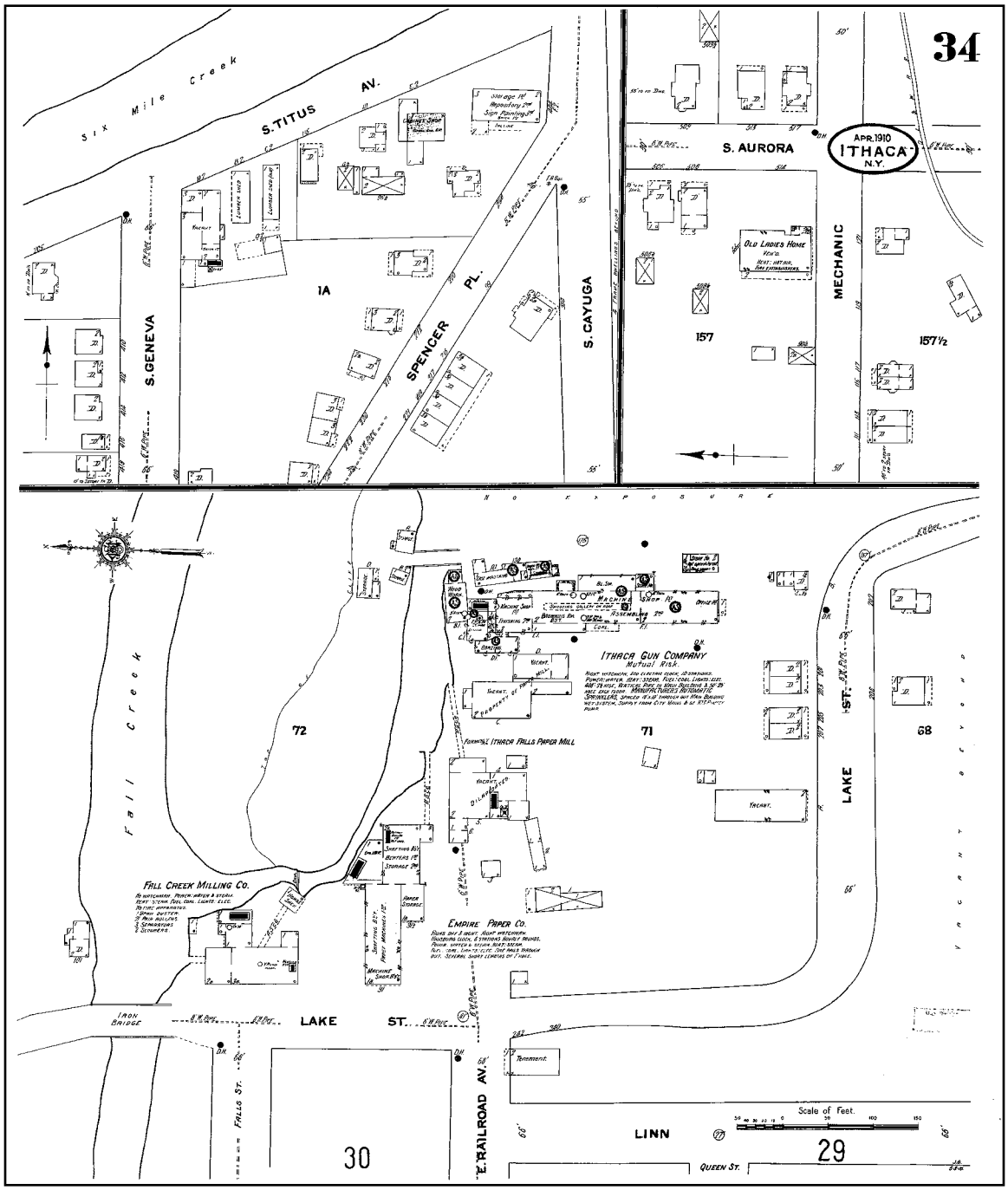

Fig. 34. *Ithaca, New York* [map], 1910, Scale not given, "Digital Sanborn maps 1867-1970," Cornell University Library. http://resolver.library.cornell.edu/misc/4455183.

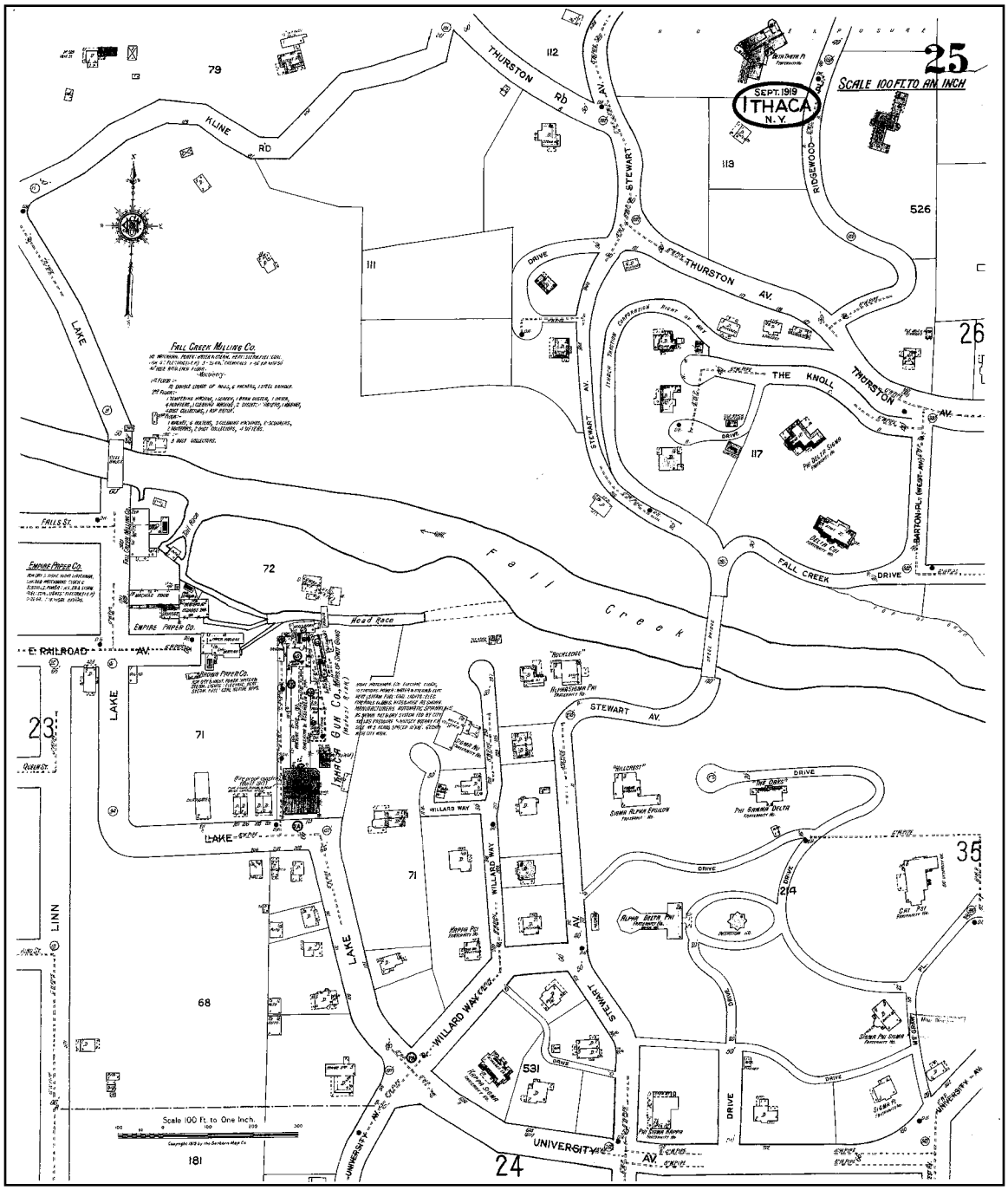

Fig. 35. *Ithaca, New York* [map], 1919, Scale not given, "Digital Sanborn maps 1867-1970," Cornell University Library. http://resolver.library.cornell.edu/misc/4455183.

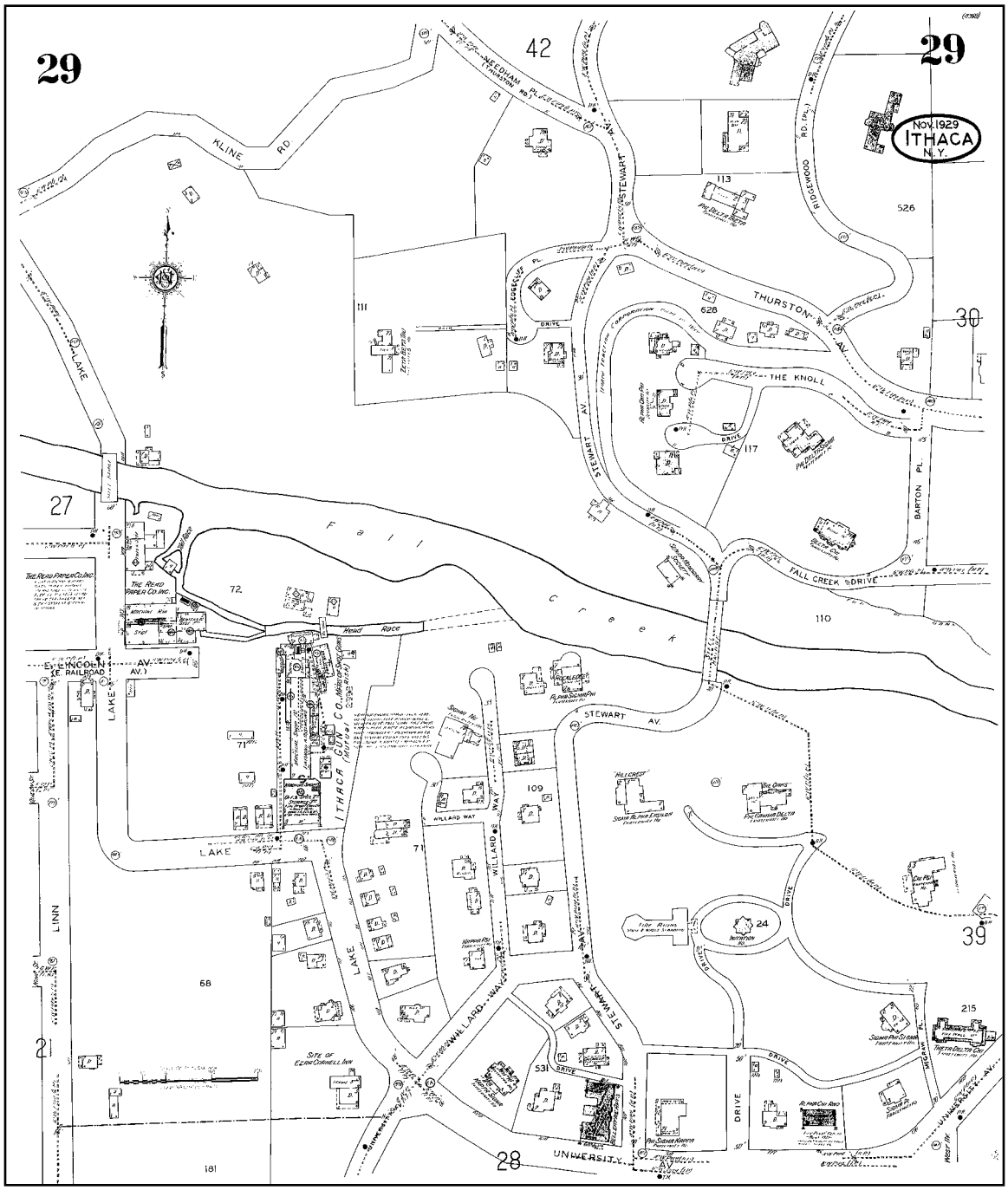

Fig. 36. *Ithaca, New York* [map], 1929, Scale not given, "Digital Sanborn maps 1867-1970," Cornell University Library. http://resolver.library.cornell.edu/misc/4455183.

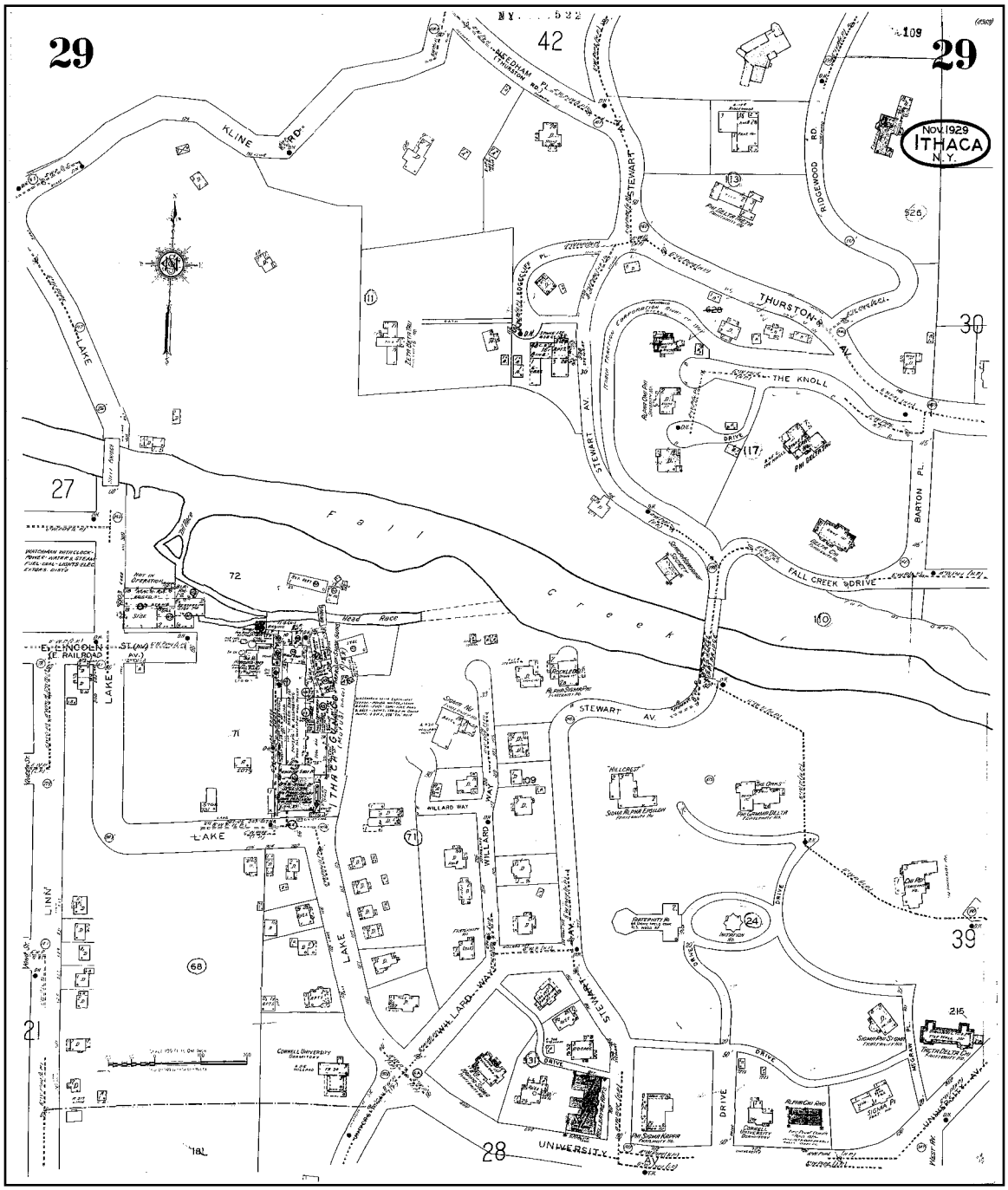

Fig. 37. *Ithaca, New York* [map], 1929-1961, Scale not given, "Digital Sanborn maps 1867-1970," Cornell University Library. http://resolver.library.cornell.edu/misc/4455183.

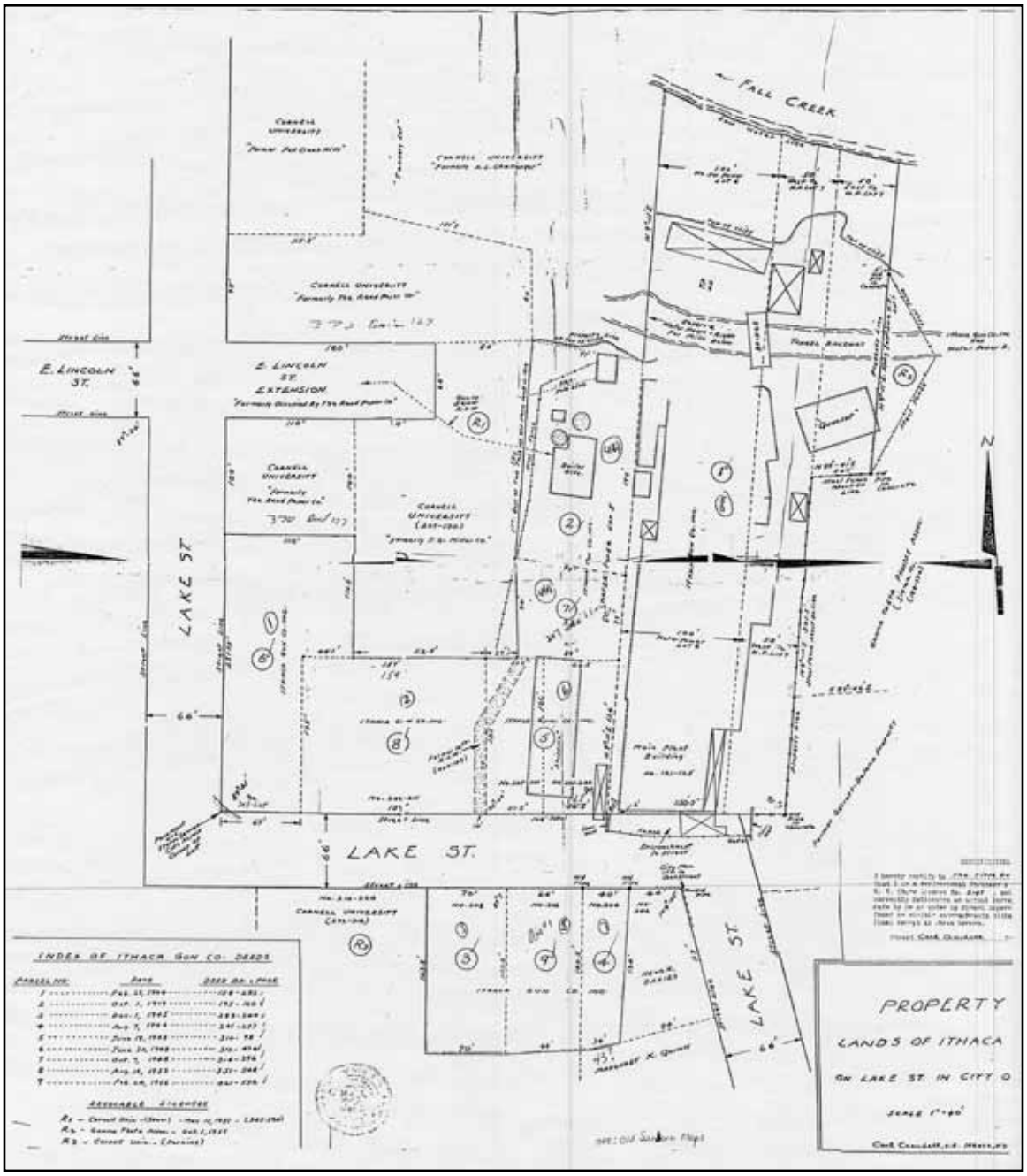

Fig. 38. Ithaca Gun Deeds. (Carl Crandall, *Property, Lands of Ithaca on Lake Street* [map], 1:40).

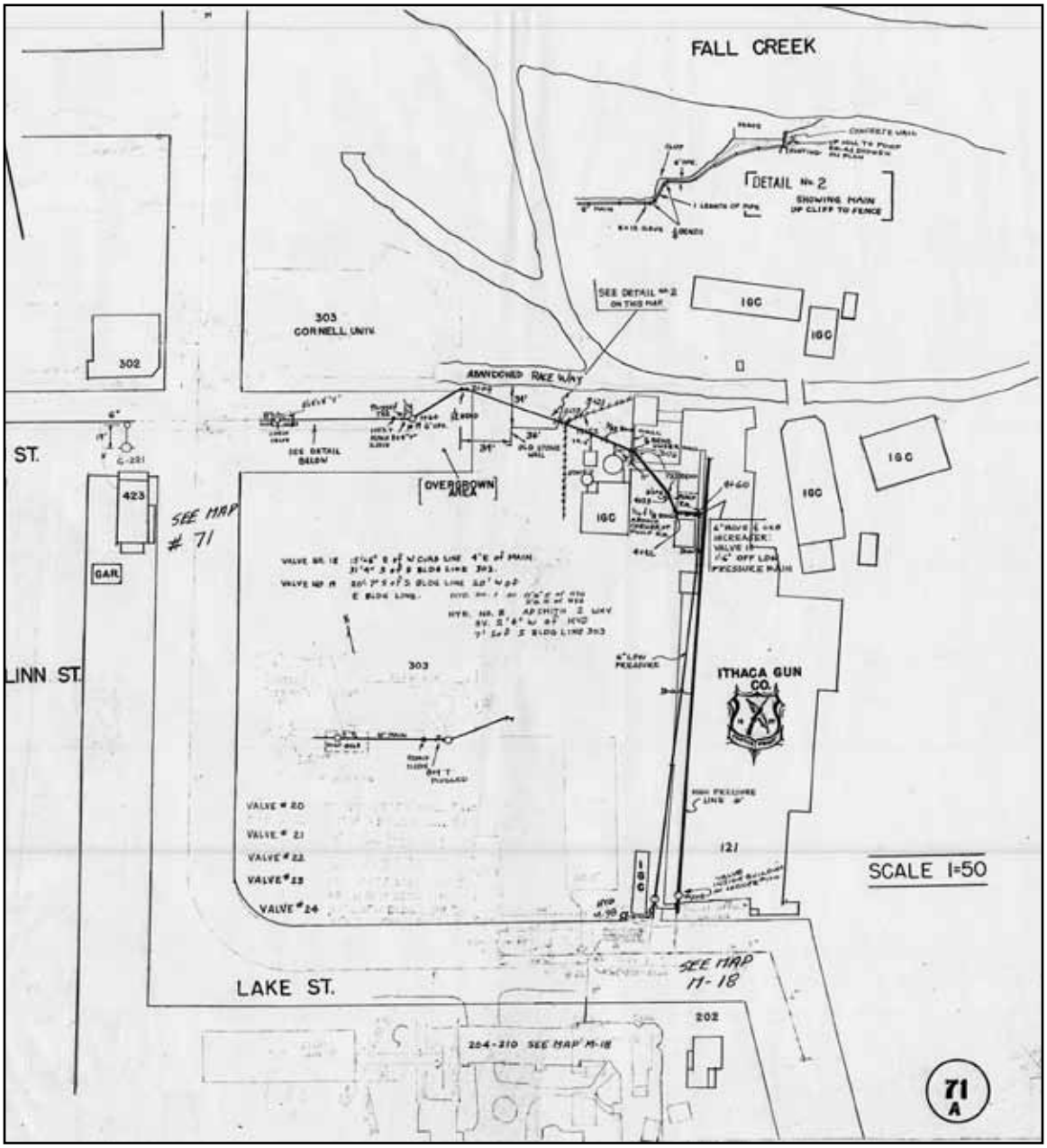

Fig. 39. Ithaca Gun Utilities.

CHAPTER 6.

MODERN HISTORY: TOXIC CONCERNS

Throughout its history, operations of the Ithaca Gun Company have been a source for widespread lead contamination. In the manufacture of firearms and munitions, lead shot was dumped into the adjacent gorge, polluting soils on the site, which have migrated onto the Ithaca Falls parcel and the greater Fall Creek natural area.[210] The Gun Company's proximity to the falls and its basin, a spot frequented by bathers and sightseers, necessitated the expedient removal of the toxic substances present throughout the site. This necessity was compounded by the intention of the City of Ithaca to convert the parcel into parkland, as well as its placement within the population of the Fall Creek neighborhood and its institutions. Nearly 2,500 residents call the neighborhood home, while approximately 2,000 people live within a quarter mile of the site.[211] The Ithaca Falls parcel attracts students from the nearby Ithaca High School, located only 1,000 feet down the creek, while the Fall Creek Elementary School is located within a quarter mile radius.[212]

In addition to the primary production of firearms and munitions, spray painting, drying of gunstocks, firing ranges, plating, metal shops, and forging all took place on site in the assembly of Ithaca Guns.[213] In 1961 and 1962 National Lead of Ohio subcontracted the Ithaca Gun Company to conduct tests as to the viability of forging hollow uranium billets into tubes for the former Atomic Energy Commission for use as fuel cores.[214] In

[210]Earth Tech, Inc., "Work Plan : Ithaca Gun Company Site" (Richmond, Virginia, July 19, 2002), 1.

[211]New York State Center for Environmental Health/United States Agency for Toxic Substances and Disease Registry, "Health Consultation : Ithaca Gun/Ithaca Falls Properties, City of Ithaca, Tompkins County, New York," (February 16, 2001), 2.

[212]Ibid.

[213]Earth Tech, Inc., "Work Plan," 1.

[214]T. J. Vitkus and J. L. Payne, *Radiological survey of the Gun Forging Machine Building,*

a 1995 radiological survey of the gun forging machine building on the site, the radiation levels of measured dose rates from soil samples were consistent with the background level in the Ithaca area and no radioactive materials attributable to past activities on the site were found.[215] Accordingly, the New York State Department of Conservation (NYSDEC), for whom the report was prepared, eliminated the site from their Formerly Utilized Sites Remedial Action program.[216]

At the close of 1988, the lease of the Ithaca Gun Property was turned over to State Street Associates L.P. under Mark Finkelstein for a term of 45 years, terminating in 2033 without any "further rights of extension or renewal".[217] The lease covered the property set forth in Schedule "A", beginning at point 100 feet east of the intersection of Lake Street and the East Lincoln Street Extension, located over the mounded gravel lot, running along the property owned by Cornell University to the north street line of Lake Street and back to the starting point.[218] The property boundaries are illustrated in the 1988 survey map, amended by T.G. Miller Associates, P.C.[219]

Prior to State Street Associates' decision to purchase the property, the firm contracted Radian Corporation to conduct sampling and analysis of locations in and around the factory site.[220] 40 samples were collected on each level of the building as well

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Ithaca Gun Company, Ithaca, New York, (Oak Ridge, TN, Tennessee: Oak Ridge Institute for Science and Education, Environmental Survey and Site Assessment Program, October, 1995).

[215]Ibid.

[216]W. Alexander Williams, Department of Energy, to Mark Finkelstein, State Street Associates L.L. II, November 29, 1995.

[217]Memorandum of Lease between State Street Associates L.P.II acting as lessor and State Street Associates L.P. acting as lessee, as signed by Mark Finkelstein, President on the 4th of January 1989. Liber 643, Page 84.

[218]Ibid., Page 85.

[219]Ibid.

[220]Radian Corporation, "Draft Final Report : Sampling and Analysis Program, Ithaca Gun Property, Ithaca, New York," (Herndon, VA, May 19, 1988), 1.

as soil samples collected near structures connected to the facility.[221] Potentially hazardous levels of arsenic, barium, chromium, and lead were detected, with concentrations of lead in soil well above the background samples near the site, requiring remediation.[222] Concentrations of 1,1,2-trichloroethane (TCE) were found in water samples in the shooting range to be five or six times the guidance value for ground water in the state, with solid samples taken near the degreasing machine on the second story of the main building to be at similarly high levels.[223] Ground water pollution was not found to be significant by the study, rather, the high levels of TCE and lead found in water samples were most likely indicative of surface water coming into contact with contaminated ground.[224] Restoration of the building interior would require renovation of the wood flooring near the degreaser, cleansing most interior surfaces of lead, ridding the insulating materials of asbestos, and the sumps and storm sewers cleaned out with any sediment being removed as hazardous waste.[225]

In October 1997, a study of Ithaca Falls was conducted for the city's planning department to review the historical and current conditions of the site and identify potential environmental concerns.[226] The study encompassed the Fall Creek gorge, waterway, and land adjacent to the south side of the gorge between the Lake Street Bridge to the west and Stewart Avenue Bridge to the east.[227] Soil and water testing was conducted later that year in the raceway of Ithaca Gun Company and the Island

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[221]Ibid, 2-4.

[222]Ibid, 16-18.

[223]Ibid, 22-23.

[224]Ibid, 26-27.

[225]Ibid, 28-31.

[226]Enviro-Control Technologies, Inc., "Phase 1 Environmental Site Assessment: Location: Ithaca Falls," Department of Planning & Development, City of Ithaca (Johnson City, NY, October 15, 1997), 2.

[227]Ibid., 2.

area adjacent to Fall Creek per the results of the earlier environmental assessment.[228] The results of the survey indicated levels of heavy metals above NYSDEC cleanup standards.[229] Previous sampling had been conducted by Cornell University also in 1997 and by the NYSDEC the following year.[230] Cornell's findings reported lead-concentrations up to 111,000 parts per million (ppm) in comparison to the DEC's soil samples with ranges up to 215,000 ppm.[231]

In May of 1999, the NYDEC wrote to Finkelstein, charging him as a responsible party for the discharge of petroleum and enclosed a stipulation agreement in an effort to bring about the expeditious remediation of the discharge.[232] Said discharge is recorded as occurring on or before March 18, 1999 at the former Ithaca Gun Site.[233] According to the NYSDEC Spill Report Form, Larry Cutting of the DEC recorded the spill date as occurring around that time, and listed the source as industrial, having an unknown cause, and affecting the surface water of the raceway to Fall Creek.[234]

In response to the many, albeit incomprehensive, environmental assessments of the site, NYSDEC requested on August 29, 2000 that the U.S. Environmental Protection Agency (EPA) conduct an immediate emergency removal action to address the lead contamination on both the city and gun company parcels in order to mitigate the

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[228]Enviro-Control Technologies, Inc., "Phase II Investigation Report: Location: Ithaca Falls," Department of Planning & Development, City of Ithaca (Johnson City, NY, December 15, 1997), 1.

[229]Ibid., 2-7.

[230]Earth Tech, Inc., "Master Health and Safety Plan, Ithaca Gun Company" (Richmond, Virginia, July 2002), sec. 1, p. 2.

[231]Ibid.,

[232]Gary L, Peterson, P.E., Kirkwood Spill Engineer, NYDEC Spill Prevention and Response, Kirkwood Sub-Office, Region7, to Mark Finkelstein, May 25, 1999, Ithaca Gun Company Site Papers, Tompkins County Public Library, 363.7287 Papers.

[233]Ibid.

[234]NYSDEC Spill Report Form, Spill Number 9965014, Ithaca Gun Company Site Papers, Tompkins County Public Library, 363.7287 Papers.

significant health threat represented by the site.[235] Hereafter, the Ithaca Gun Company Site refers to the property formerly owned by the Ithaca Gun Company at 121-125 Lake Street, Ithaca, New York, as well as the Ithaca Falls parcel owned by the City of Ithaca, onto which lead shot deposited by the gun company has migrated.

On September 26 through 29, 2000, the Removal Support Team with the EPA Response and Prevention Branch carried out a removal site assessment, collecting surface and subsurface soil and sediment samples to screen for lead and arsenic.[236] Testing was performed using a field portable X-Ray Fluorescence (XRF) instrument to analyze samples on site.[237] An area of 100 feet by 200 feet on the Ithaca Falls parcel was subdivided into a 25-foot by 25-foot grid in which samples were collected up to six inches in depth, with a total of four subsurface samples collected at a 15-inch depth.[238] Samples were collected along the raceway every 25 feet for a length of 500 feet.[239] The same interval was used in gathering samples along the northern boundary of the site on southern gorge wall of Fall Creek.[240] Ten samples were collected on the Gun Company site itself[241]. Ten of the total 110 samples collected were sent to a laboratory for regression analysis to validate the XRF results.[242]

This initial assessment uncovered lead concentrations well above the normal level

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[235]Michael J. O'Toole Jr., Director, Division of Environmental Remediation, NYS Department of Environmental Conservation, "Re: Ithaca Gun Company, Ithaca (C), Tompkins County" (Albany, New York, August 29, 2000).

[236]Removal Support Team: Roy F. Weston, Inc., "X-Ray Fluorescence Analysis: Ithaca Gun Company Site, Ithaca, New York," (Edison, NJ, November 22, 2000), 1.

[237]Ibid.

[238]Ibid.

[239]Ibid.

[240]Ibid.

[241]Ibid.

[242]Ibid., 2.

of lead in soil. Surface samples ranged in concentrations from non-detected to 136,000 ppm, in comparison to average soil levels of 50 ppm and well above the intended cleanup level of 100 ppm dictated by the background levels.[243] Arsenic concentrations reached up to 3,000 ppm in the surface samples, however laboratory results were rejected and the reliability of the results could not be established.[244] The subsurface samples contained lead in concentrations up to 28,900 ppm and non-detectable levels of arsenic.[245] In May of 2001, a soil depth profile conducted by the DEC revealed that the eastern boundary of the Ithaca Falls parcel had soils of up to five feet in depth, the deepest on the site, decreasing in depth to the western end with a depth of one and a half feet.[246] The DEC estimated the total volume of contaminated soil to be 1,820 cubic yards.[247]

Further demarcation of the extent of contamination at the site occurred from July 24 to 26, 2001, at locations in the upper extent of the raceway and channel banks including the plunge pool below the bridge.[248] 64 samples were collected and analyzed using an XRF spectrometer with ten percent of the samples sent away to an independent laboratory to confirm the results.[249] Samples indicated lead concentrations from 648 ppm to 42,400 ppm, of which the highest levels were found in the plunge pool and all samples being above the EPA's Site Specific Action Level of 400 ppm.[250]

The evaluation of the public health implications of exposure to the lead-contaminated soils conducted by the New York State Department of Health (NYSDOH)

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[243]Ibid., 3.

[244]Ibid.

[245]Ibid.

[246]Earth Tech, Inc., "Work Plan," 2.

[247]Ibid.

[248]Removal Support Team, 1-2.

[249]Ibid., 1.

[250]Ibid., 5.

in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR) in early 2001 found that areas of contamination posed a public health hazard.[251] Access to the Ithaca Falls parcel had the potential to expose individuals to high levels of lead through skin contact with soil or from accidental ingestion or inhalation of lead dust or soil.[252] The migration of soil downhill from less accessible areas and the possibility of tracking lead off-site, particularly to homes or schools with young children, who are especially sensitive to the effects of lead on the nervous system, was cause for specific concern.[253]

The site's On-Scene Coordinator, Jack Harmon, filed an Action Memorandum on September 19, 2001, requesting approval of removal action for the site.[254] The memorandum outlined actions to be taken in the remediation of the site, which was determined to pose a threat to the environment and endangered the public health or welfare.[255] At the time, the estimated project ceiling was $1,960,000,[256] but would soon balloon upwards of four million dollars.

Later in 2001, Wally Diehl, developer from North Carolina contracted an environmental firm to conduct an environmental site assessment to identify an existing or past release of hazardous substances on the gun company site.[257] In doing so, Diehl satisfied one of the requirements set forth by the Comprehensive Environmental,

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[251]Center for Environmental Health, 1-3.

[252]Ibid., 3.

[253]Ibid., 3.

[254]Jack D. Harmon, "Request for a Removal Action for the Ithaca Gun Company Site, Ithaca, Tompkins County, New York," Removal Action Branch, U.S. Environmental Protection Agency (September 19, 2001), 1.

[255]Ibid., 5-9.

[256]Ibid., 1.

[257]Prescott Environmental Associates, Inc., "Phase I Environmental Site Assessment : Former Ithaca Gun Factory Property, Falls Creek and Lake Street, Ithaca, Tompkins County, NY," (Chapel Hill, NC, October 29, 2001), 1-8.

Response, Compensation, and Liability Act (CERCLA) to qualify for an innocent landowner defense to liability.[258] The findings of the assessment confirmed the presence of recognized environmental conditions, posing a material threat on the property.[259]

During the week of April 15, 2002, the EPA received a demolition permit from the City of Ithaca and demolished Ye Old Man's Home, also called the metal building, and the Barn, located on the Island, the area on the site between the raceway and Fall Creek gorge, as well as the Quonset Hut adjacent to the bridge crossing the raceway.[260] The location of the Quonset Hut was used as a command post and staging area for the cleanup with access from Lake Street. In order to make the road fully accessible to heavy machinery, the road was widened between the forging building on the west and concrete retaining wall on the east by removing the retaining wall and soil to construct a road with a wooden retaining wall and a width of 15 feet.[261] The soil that was removed was tested and found to have lead concentrations up to 900 ppm.[262] The soil was then placed along the bank of the upper raceway and covered with geomembrane fabric, with a silt fence at the base to prevent the migration of contaminated sediment.[263]

For the purposes of the cleanup, the work plan divided the site into smaller areas including the East Area, Millrace Area, Island Area, Westerly Parcel, Northeast Area, Fall Creek Gorge Area, and the Lake Street Area.[264] The East Area encompassed the vegetated slope from the access road to the parking lot on the Sigma Nu property, found

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[258]Ibid., 8.

[259]Ibid., 39.

[260]Earth Tech, Inc., "Work Plan," 4.

[261]Ibid., 6.

[262]Ibid.

[263]Ibid.

[264]Ibid.,11.

to have lead-contaminated soils.[265] The slope along the length of the road is property of the Sigma Nu Fraternity, with polluted areas located at the southern and northern ends.[266] The Millrace Area splits the raceway into three sections: the Upper Area from the raceway dam to the bridge, the Middle Area running a length of 175 feet from the bridge and plunge pool to just above the rock ledge, and the Lower Area from the rock ledge to the end of the millrace.[267] The portion of the site between the raceway and Fall Creek is the Island Area, containing the majority of lead-contaminated soil.[268] The Westerly parcel refers to the portion of the site to the west of the main manufacturing building down the steep slope to the parking lot for the Gun Hill Apartments.[269] The ailanthus and Norway maples present on the slope prior to the soil removal were removed, for the most part, during the cleanup.[270] The Northeast Area to the east of the fence on the northeastern corner of the site was where the lead shot was fired into the embankment to test guns, and contains sensitive native plant species.[271] A narrow strip beginning at the base of the falls and continuing for 230 feet along the base of the gorge cliff constituted the Gorge Area.[272] The Lake Street Area included a small portion of land containing approximately 50 cubic yards of material south of the gravel parking lot across from the intersection of Lake and Lincoln Streets where the mills once stood.[273] Each area was subdivided into smaller grids, with individual work plans accommodating the special needs of the varying characteristics of the areas.

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[265]Ibid., 2.

[266]Ibid.

[267]Ibid., 12.

[268]Ibid.

[269]Ibid.

[270]Ibid.

[271]Ibid.

[272]Ibid.

[273]Ibid.

Prior to the removal of contaminated soil, the City of Ithaca Forester along with Natural Area Commission members documented the site's trees and shrubs, tagging the specimens to be either left in place, removed and transplanted, or recycled.[274] These trees, as well as trees greater than three, four, or six inches in diameter remained on the site.[275] The Natural Areas Commission (NAC) was established by the Common Council of the City of Ithaca in order to "support the conservation" of the city's Natural Areas, and, among other responsibilities, make recommendations as to the maintenance of the sites.[276] Native or rare plants identified by the NAC, Cornell Plantations, and forester were removed to the Plantations to be replanted after the completion of the soil removal and topsoil placement in preparation for revegetation.[277] All ailanthus and Norway maple specimens were to be removed.[278] Before remediation efforts in each area, silt fences, coconut logs, and other erosion control materials were allotted to be placed as protection against sediment migration.[279]

Background air monitoring using data ram stations began the week before vacuuming commenced at one upwind and three downwind locations around the site, as well as a station at the nearby Fall creek Elementary School, with locations subject to change according to weather conditions.[280] These stations were set up to determine potential off-site emissions affecting the community.[281] No increase in particulates

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[274]Ibid., 13.

[275]Ibid.

[276]City of Ithaca, *Boards and Committees: Natural Areas Commission*, http://www.ci.ithaca.ny.us/index.asp?Type=B_BASIC&SEC={2EAD3CB7-DA0C-4D24-831A-8894D49863B5}&DE={B407949F-ED4D-4CC4-81C2-454A42428DC4}.

[277]Earth Tech, Inc., "Work Plan," 13.

[278]Ibid.

[279]Ibid.

[280]Jack D. Harmon, *Bulletins: Ithaca Gun Company Site*, July 19, 2002, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[281]Earth Tech, Inc., "Ambient Air Monitoring/Sampling Plan, Ithaca Gun Company Site,"

was observed in the weeks following the beginning of the cleanup, with lead and arsenic values well below permissible levels.[282] Air monitoring continued throughout the cleanup process, during which time it was possible for the release of lead and arsenic contaminated dust from soil excavation.[283] Air samples were collected and reviewed daily, assessing the effectiveness of dust suppression measures using action levels for contaminants based on recommendations issued by the National Institute fro Occupational Safety and Health (NIOSH).[284] Ambient air quality was monitored using particulate meters, sensitive to very small particle sizes, which pose the greatest health risks, on a real-time basis once every minute during the workday to be reviewed at the conclusion of each day.[285] These results were compared to the action levels set forth by the NYSDOH at about 0.011 ppm for airborne emissions.[286] In the event that dust concentrations exceeded the threshold, work was halted until readings fell below action levels.[287]

Health and safety management of the site was headed by Jack D. Harmon, designated as the on-scene coordinator and representative of the EPA responsible for overall project management as well as the health and safety of all individuals of all individuals on the site.[288] The permissible exposure limit for personnel on site for lead concentrations as set by the Occupational Safety and Health Administration is 0.05 mg/

(Richmond, VA, July 2002), 1.

[282]Harmon, *Bulletins*, August 12, 2002, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[283]Earth Tech, Inc., "Ambient Air Monitoring," 1.

[284]Ibid.

[285]Ibid., 3.

[286]Ibid., 4.

[287]Ibid.

[288]Earth Tech, Inc., "Master Health and Safety Plan," sec. 3, p. 1-6.

m^3 or 0.0059 ppm with potentially dangerous levels reaching 100 mg/m^3.[289]

In most areas requiring remediation, a truck-mounted vacuum unit was used in conjunction with other special equipment to remove contaminated soil into sealed containers, except on the steep terrain of the lower south side of the Island.[290] The contract for providing vacuum services was awarded to Clean Harbors Environmental Services Companies based out of Albany.[291] Vacuuming began July 23, 2002, with the removal of debris and site preparation previously begun on the first half of the east area.[292] Root mass and compacted soil hampered operations in the east area, but the first 12-ton box of lead-contaminated soil was removed for off-site disposal at the Ontario County Landfill a week after the cleanup began.[293] With the conclusion of soil removal in each section, topsoil was added and was seeded and covered with erosion control matting.[294] Removal of soil in the east area was near completion at the end of 2002 with 84 loads of soil removed containing an average lead concentration of 110 ppm, when the onset of winter conditions put a halt to efforts until the spring.[295] Soil removal in the westerly parcel was put on hold in September 2002 until late spring the following year due to logistical concerns with the Cornell University property while school was in session.[296]

In February of 2003, the EPA signed an agreement with the City of Ithaca, State Street Associates L.P. II, and Fall Creek Redevelopment to offset the four million dollar

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[289]Ibid.,

[290]Earth Tech, Inc., "Work Plan," 14.

[291]Harmon, *Bulletins*, July 19, 2002, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[292]Ibid.

[293]Ibid., *Bulletins*, July 29, 2002, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[294]Ibid., *Bulletins*, August 12, 2002, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[295]Ibid., *Bulletins*, December 20, 2002, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[296]Ibid., *Bulletins*, September 9, 2002, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

cleanup cost of the site.[297] The settlement agreement was open to public comment for an extended period of 30 days, during which time Walter Hang, president of Ithaca-based Toxics Targeting obtained the signatures of 28 community members and officials on a letter calling for Cornell University and the Ithaca Gun Co. to help offset the cleanup cost.[298] On June 6, 2003 the EPA upheld the terms of the settlement for the Superfund site, requiring the city to reimburse the EPA $150,000, while State Street Associates, owners of the former gun property, would pay the EPA a sum of $165,000.[299] A version of the agreement was drafted in 2001, but was ammended, asking for $15,000 more from State Street Associates.[300] Fall Creek Redevelopment, the prospective purchaser of the site which plans to redevelop the factory property, agreed to pay the EPA $50,000.[301] The EPA's cleanup of the site put additional value on the property, which was appraised at that time for $170,000, of which some value was regained by the settlement and the addition of the new owners in the agreement.[302]

Operations resumed in mid-May of 2003 continuing in the east area, while preparation for remediation on the westerly slope adjacent to the parking lot began.[303] Approximately 1,293 tons of contaminated soil had been removed from the site prior to the recommencement of efforts.[304] Vacuuming of the westerly area began in the beginning of June, with additional air sampling to cover the new area.[305] On June 23, the abstraction

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[297]Lauren Bishop, "Cleanup deal to go before public," *The Ithaca Journal*, February 2003: sec. A, p.1.

[298]Lauren Bishop, "28 comment on gun factory deal," *The Ithaca Journal*, April 2003: sec. B, p. 1.

[299]George Shanahan, "Settlement and PPA Entered for Ithaca Gun," *cleanup news*, 2003: 6.

[300]Bishop, "Cleanup deal," sec. A, p. 1.

[301]Shanahan, "Settlement," 6.

[302]Ibid.

[303]Harmon, *Bulletins*, May 19, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[304]Ibid., *Bulletins*, May 26, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[305]Ibid., *Bulletins*, June 9, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

of polluted soil began in the Upper Millrace Area and continued until mid-August.[306] Vacuuming of the Westerly parcel was completed at the end of June and restoration with backfill, topsoil, seeding, and erosion control finished the following month.[307] In July, vacuuming in the Northeast Area commenced, with safety concerns due to the adjacency of the cliff being addressed with the installation of high visibility fencing.[308] The area was completed at the end of July,[309] and topsoiling of the Northeast and Upper Millrace Areas was completed in late August.[310] Soil and rock fragments were removed from the Middle Millrace Area from the plunge pool by flushing the sections with water and lowering equipment from a small crane based on the Island.[311] Vacuum operations were situated in the parking lot off of Lake Street with rigid plastic piping set up to carry soil down from the Island Area, aided by the change in elevation.[312] In order to access the lower western end of the Island, a temporary bridge was formed across the raceway with the placement of a culvert pipe covered in crushed stone to be removed after the completion of operations on the Island.[313] In September of 2003, 150 square feet of blueberry sod was established in the Northeast and Upper Millrace Areas with the guidance of the Natural Areas Commission.[314] The NAC were on site to spread seed in sections of those areas in late October and November of that year.[315] The removal of lead-contaminated soils in the plunge pool was completed in late October while operations continued on the Island

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[306]Ibid., *Bulletins*, August 18, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[307]Ibid., *Bulletins*, July 21, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[308]Ibid., *Bulletins*, July 14, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[309]Ibid., *Bulletins*, July 28, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[310]Ibid., *Bulletins*, August 19, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[311]Ibid., *Bulletins*, September 15, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[312]Ibid., *Bulletins*, September 8, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[313]Ibid.

[314]Ibid., *Bulletins*, September 29, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[315]Ibid., *Bulletins*, October 28, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

sections into November.[316] Work stopped on the Island mid-December due to the cold temperatures to resume in spring of the next year.[317] By that time, 286 loads containing 4,595 tons of contaminated and hazardous soil had been removed, surpassing the EPA's initial estimates of soil to be taken away.[318]

At the beginning of March 2004, Earth Tech, rather than Clean Harbors who were contracted for the vacuum work, began the removal of contaminated material located at the base of Fall Creek gorge manually and using a mini-excavator.[319] Materials were then lifted up to a staging area on the Island.[320] Members of the NAC identified invasive species of vegetation to be removed.[321] The gorge area was completed at the end of the month with 258 cubic yard bags filled containing 259 tons of debris and post excavation samples collected.[322] Complications with the disposal facility prevented the contaminated material from being sent off-site while arrangements were made with other facilities.[323] Placement of topsoil on the completed sections of the Island took place in May with the NAC recommending the placement of twelve Chinkapin Oaks and the types of grass seed to revegetate the area.[324]

Vacuuming resumed on the lower Island area in late May with soil being deposited directly into the truck after which it was deposited into dumpsters and stockpiled on the paved area of the Island before sending it for off-site disposal at the

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[316]Ibid.

[317]Ibid., *Bulletins*, December 15, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[318]Ibid., *Bulletins*, December 15, 2003, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[319]Ibid., *Bulletins*, March 1, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[320]Ibid.

[321]Ibid., *Bulletins*, March 8, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[322]Ibid., *Bulletins*, March 29, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[323]Ibid., *Bulletins*, April 5, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[324]Ibid., *Bulletins*, May 17, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

Ontario County landfill.[325] A small crew stayed on site carrying out revegetation work while operations were halted in the beginning of June, waiting for additional requests for funding to be processed.[326] A total of $800,000 was requested, more than half of which was immediately committed.[327] Work resumed on the Island the following week with additional funds available to complete the project.[328] Debris from the lower portion of the Island was transferred to the staging area while vacuuming continued,[329] with the Island area completed in July.[330] Members of the NAC weeded the area and discussions were held as to the number and types of woody plants and seeds used in revegetating the rest of the Island.[331] Cleanup efforts moved to the area between the gun factory and the middle section of the raceway with seven loads shipped off in the first week.[332] Work concentrated on vacuuming the second plunge pool and adjacent rock ledge in the Middle Millrace Area, using a fire hose to wash down material from the rock walls unable to be reached by workers.[333] After the completion of the second plunge pool, vacuuming moved to the lower raceway with material being stockpiled.[334] All vacuum operations were concluded at the end of September 2004 and all material was sent for disposal[335]. At the close of the cleanup, a total of 4,025 tons of soil had been removed, as well as 2,065 tons

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[325]Ibid., *Bulletins*, May 31, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[326]Ibid., *Bulletins*, June 7, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[327]Ibid.

[328]Ibid., *Bulletins*, June 14, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[329]Ibid., *Bulletins*, June 28, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[330]Ibid., *Bulletins*, July 19, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[331]Ibid., *Bulletins*, August 16, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[332]Ibid., *Bulletins*, July 26, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[333]Ibid., *Bulletins*, August 30, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[334]Ibid., *Bulletins*, September 20, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[335]Ibid., *Bulletins*, September 27, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

of hazardous soil and materials.[336] The project was demobilized in October 2004.[337]

While the cleanup endeavor progressed, talks were underway as to the future of the site. North Carolina developer Wally Diehl presented his plans to redevelop the Ithaca Gun factory into condominiums to Ithaca's Common Council in July 2003.[338] The council voted to adopt a memo outlining why the site should be rezoned from industrial to residential.[339] After receiving community input, the redevelopment included plans for four or five story residences above three levels of parking with public access to the south side of Fall Creek gorge and Ithaca Falls.[340] While the EPA was responsible for the cleanup of the majority of the Ithaca Gun site, the factory buildings themselves were outside of the organization's purview. That responsibility was left to Wally Diehl under an agreement with the state.

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[336]Ibid., *Bulletins*, September 27, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[337]Ibid., *Bulletins*, October 18, 2004, http://www.epaosc.org/site/bulletins_list.aspx?site_id=QJ.

[338]Lauren Bishop, "Ithaca Gun site plan praised," *The Ithaca Journal*, June 2003.

[339]Ibid.

[340]Ibid.

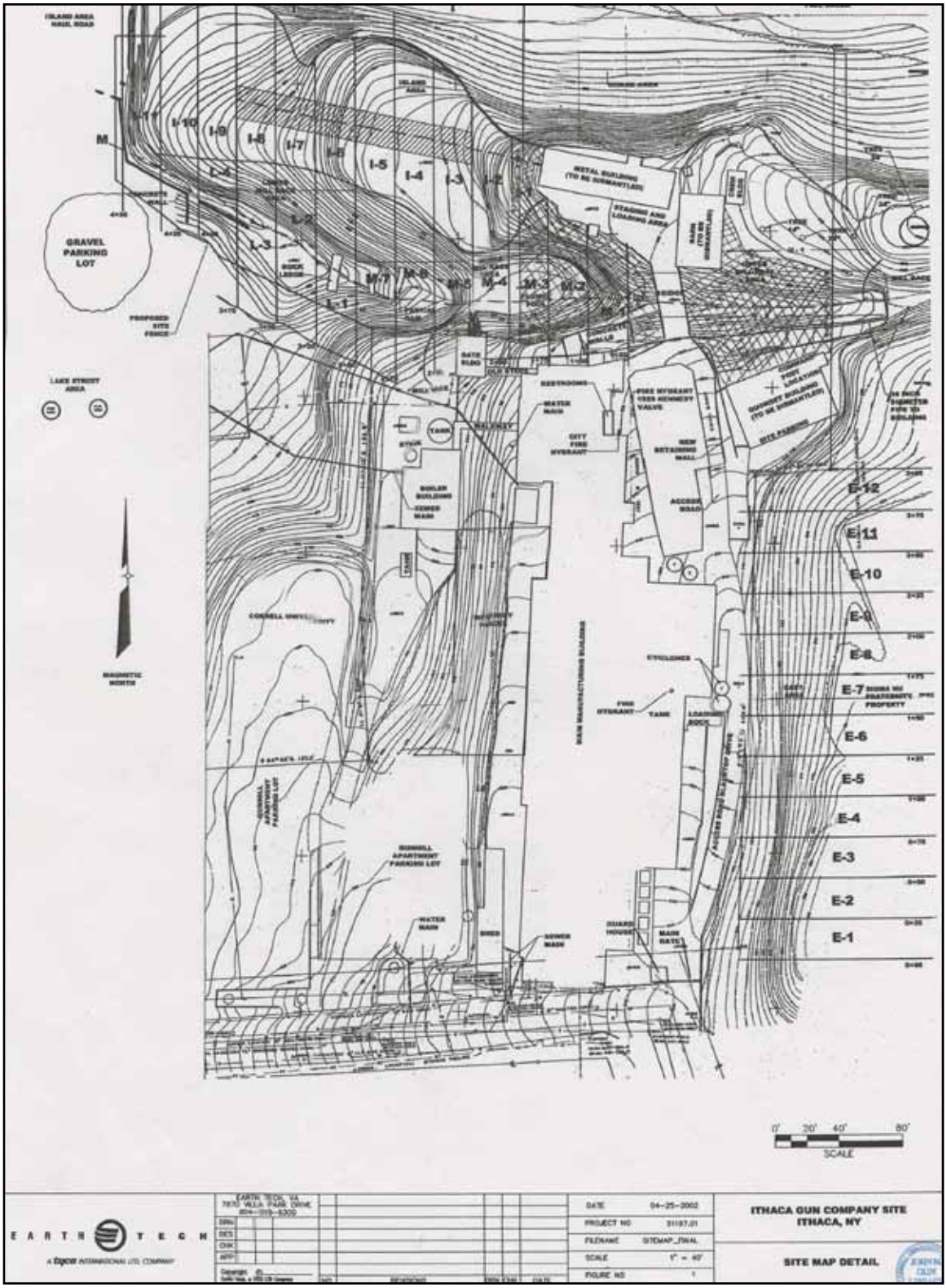

Fig. 40. EPA Cleanup map showing topography and work areas on the Ithaca Gun property. (Earth Tech, *Ithaca Gun Company Site, Ithaca, N.Y. Site Map Detail* [map], 1:40, (Virginia: Earth Tech, 2002).

Fig. 41. EPA cleanup of raceway. (Photograph courtesy of Kathryn Gleason, 2004).

Fig. 42. Exposed bedrock on lower Island post-cleanup. (Photograph courtesy of Kathryn Gleason, 2004).

Fig. 43. Hose running up the Island during EPA cleanup. (Photograph courtesy of Kathryn Gleason, 2004).

Fig. 44. EPA cleanup of middle raceway below plunge pool with foundation of the original gun company building at left. (Photograph courtesy of Kathryn Gleason, 2004).

Fig. 45. Revegetation and hay cover on upper Island. (Photograph courtesy of Kathryn Gleason, 2004).

Fig. 46. Revegetation of slope below gun factory. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 47. Revegetation of slope below gun factory. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 48. EPA cleanup of upper raceway, stripped to bedrock. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 49. EPA staging area on Island platform with vacuum truck in background. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 50. EPA cleanup of Island and upper raceway. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 51. EPA cleanup of slope to upper Island. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 52. Gun factory outbuilding on Island platform. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 53. EPA cleanup trucks on access road. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 54. Cleanup of Island above platform. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 55. Cleanup of raceway above bridge. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 56. EPA cleanup of upper raceway before plunge pool. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 57. EPA cleanup equipment on upper Island. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

Fig. 58. Bulkhead post-cleanup. (Photograph by Liska Clemence, 2003, courtesy of Kathryn Gleason).

CHAPTER 7.

SITE REDEVELOPMENT

Complications in Diehl's plans to proceed with his proposed condominim complex arose when his area variance request to raise the maximum building height from 40 to 70 feet came up against a divided Board of Zoning Appeals.[341] Citing the public's negative position on the request, Diehl withdrew his application in January 2004 with no plans to re-submit.[342] Neighbors, including Janet Greenfield and Peter Bloom of 210 Willard Way felt that the proposal would ruin their view over the city and Cayuga Lake, while others thought the addition of 168 parking spots would have a harmful impact on traffic.[343] Diehl's argument for the height increase centered around the inability of the proposal to work financially with a building less than 70 feet.[344] The decision came after the Board granted Diehl a use variance in November 2003 to build his proposed residential structure on the previously zoned industrial site.[345]

After the cleanup of the city-owned property along Fall Creek gorge adjacent to the former Ithaca Gun Factory was completed in 2004, soil tests taken in 2006 found levels of lead contamination up to 184,000 ppm, 460 times higher than the cleanup goal set by the EPA, with high levels of arsenic found as well.[346] The upper slope on the island between the raceway and gorge belonging to developer Wally Diehl was

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[341]Roger Du Puis II, "Developer withdraws condo bid," *The Ithaca Journal*, January 2004: sec. A, p.1.

[342]Ibid.

[343]Ibid.

[344]Jarrett McLaughlin, "Gun Co. site use variance granted," *The Ithaca Journal*, November 2003: sec. B, p. 1.

[345]Ibid.

[346]Jennie Daley, "Lead levels high near gun site," *The Ithaca Journal*, September 2006: sec. A, p. 1.

not part of the remediation effort.[347] The EPA covered the steep slope with tarps at the conclusion of their cleanup in 2004, but the measure was insufficient in the prevention of the redistribution of contaminated material to areas previously cleared.[348] The recontamination of those areas brought to light Diehl's failure to cleanup his property after entering into the DEC's Voluntary Cleanup Program in 2003.[349]

In late October 2006, interim remedial work began at the former Ithaca Gun facility, with the engineering firm O'Brien & Gere contracted by Wally Deihl's company, Fall Creek Redevelopment LLC.[350] According to the work plan, the silt fences would be replaced along the downhill slope edges on the island and raceway, as would the tarps on the upper island area slope, extending to the silt fencing.[351] Fall Creek agreed to cleanup lead shot visible on the city's property in good faith, without accepting liability for off-site contamination.[352] The work was undertaken as part of Diehl's Voluntary Cleanup Agreement with the DEC[353].

Diehl's plans for redevelopment came a step closer in September 2007 when the city's Common Council voted to approve a Redevelopment Agreement between the city and his company, Fall Creek Redevelopment.[354] Ithaca developers Travis and Travis had partnered with Fall Creek Redevelopment with plans to demolish the former Gun Company buildings, remediate the lead contamination left by the site's former use as a

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[347]Ibid.

[348]Ibid.

[349]Ibid.

[350]Senior Vice President Peter E. Grevelding, Obrien & Gere Engineers, Inc. to Dan Fuller, NYSDEC, October, 20, 2006, Re: Ithaca Gun IRM Work Plan, Ithaca Gun Company Site Papers, Tompkins County Public Library, 363.7287 Papers.

[351]Ibid.

[352]Ibid.

[353]"Ithaca Gun cleanup gets under way," *The Ithaca Journal*, November 2006: sec. A, p. 1.

[354]Krisy Gashler, "City OKs Ithaca Gun condo plan," *The Ithaca Journal*, September 2007: A.1.

gun factory, and build a complex of 33 condos in its stead.[355] The high-end condos were set to sell at market rate, between $300,000 to $400,000 per unit, an objection of one of the Council members that the plans for redevelopment didn't include low or middle-income housing.[356] The high cost was found to be necessary by the developers to offset the remediation cost, which would have been covered if plans for larger complexes had not been rejected.[357] In addition to the Council's agreement to the renovation plan, a unanimous vote was passed to apply for two separate state grants to cover the cost of remediation; a Restore NY grant to pay for the demolition of the gun factory, and an Environmental Restoration Program (ERP) grant to pay for the cleanup of sub-surface lead contamination, with the developers agreeing to pay the ten percent local share contribution.[358] The city's previous application for the Restore New York grant was rejected in September 2006.[359] The city secured the Restore NY grant, worth $2.3 million, and later received a guarantee from the ERP for 90 percent of the estimated cost of the remaining soil remediation, totalling near a quarter million dollars.[360] The latter would cover the rememdiation for the area slotted to become the public walkway connecing to the proposed Ithaca Falls Overlook Park, donated to the city from the former Ithaca Gun parcel.[361] The Overlook would allow public acces to dramatic views of the falls unavailable for the past century, with the city providing maintanence for the scenic park area.[362]

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[355]Ibid.

[356]Ibid.

[357]Ibid.

[358]Ibid.

[359]"Cleanup gets under way," sec. A, p. 1.

[360]Krisy Gashler, "State grants $700K for Ithaca Gun land cleanup; Restoration grant will subsidize public walkway and park overlooking falls," *The Ithaca Journal*, May 2008: sec. A, p. 1.

[361]Ibid.

[362]NYSDEC, *DEC Announces Grant Award and Public Meeting on Ithaca Gun Site*, May 29, 2008, http://www.dec.ny.gov/press/44252.html.

In late 2008, the final work plan for the demolition of the Ithaca Gun facility was set forth as an interim remedial measure to remove the deeriorated structures posing a health threat to the community.[363] Before demolition of the buildings began, asbestos-containing and lead-contaminated materials were stabilized and removed.[364] Demolition of former Gun Company operations included all buildings, slabs on grade, and any underlying structures,[365] with the exception of the the smoke stack and former power plant adjacent to the Cornell University owned parking lot on the site's western border. During demolition, ambient air quality was monitored with action levels set in the Community Air Monitoring Plan (CAMP) and mitigative measures were taken to minimize dust production and the potential release of airborne particulate.[366] The CAMP was meant to provide a measure of protection for the community from potential airborne contaimination, with sampling carried out by O'Brien & Gere during work activites.[367] In addition to the cleanup efforts, the DEC established a Community Advisory Group to discuss needs and concerns related to the site's cleanup process, which was made up of community members and leaders representing a wide variety of interests.[368] The work plan allowed for demolition debris to remain on site with testing of materials conducted every 500 to 1,000 cubic yards, potentially allowing for hazardous materials to escape screening, a point of conention with the Advisory group who requested that sampling be done at least every 100 cubic yards with higher standards for the levels of lead left on the

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[363]O'Brien & Gere Engineers, Inc., "Demolition Work Plan : Former Ithaca Gun Facility," (November 14, 2008), 3.

[364]Ibid.

[365]Ibid.

[366]O'Brien & Gere Engineers, Inc., "Ithaca Gun Site : Health and Safety Plan," (March 10, 2008), 1-12.

[367]O'Brien & Gere Engineers, Inc., "Community Air Monitoring Plan : Ithaca Gun Property Demolition," (Novemeber 3, 2008).

[368]NYSDEC, *DEC Announces Grant*, http://www.dec.ny.gov/press/44252.html.

site.[369]

By the close of 2008, pre-demolition work to remove asbestos in the buildings that stood there for over a century was nearly 80 percent done.[370] At the same time, the discovery of unexpectedly high levels of barium meant that almost half of the debris had to be shipped off-site rather than buried on site, tightening the budget and placing the future of the iconic smokestack at risk.[371] The cost to demolish the smokestack would be about $20,000 while restoring and preserving the structure would cost anywhere from 2 to 10 times that amount.[372]

In April of 2009, a Focused Site Investigation Work Plan was developed to specifically assess potential contamination under the basement slabs of the former Ithaca Gun buildings.[373] The existing structures at the time of the report included the main building and several outbuildings at 121-125 Lake Street, with a total building footprint to be demolished of 40,000 square feet.[374] The study measured soil vapor contamination at five points along the southern and western site boundary as well as areas under former buildings at ground water and soil sample locations.[375] Following the removal of basement slabs, underlying soils were to be pre-screened and soil samples taken if potential elevated readings were indicated for lead, cyanide, PCBs, or semivolatile

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[369]Krisy Gashler, "Advisory group insists all Gun site debris be tested," *The Ithaca Journal*, September 2008: sec. A, p. 1.

[370]Krisy Gashler, "Asbestos removal 80 percent done at Ithaca Gun site; Lead testing glitch could complicate plans for demolition," *The Ithaca Journal*, December 2008: sec. A, p. 1.

[371]Ibid.

[372]Ibid.

[373] O'Brien & Gere Engineers, Inc., "Focused Site Investigation Work Plan : Ithaca Gun Site, Ithaca, New York," (April 17, 2009), 1.

[374]Ibid.

[375]Ibid., 1-2.

organic compounds.[376] Those soils exceeding the cleanup objectives would be disposed of, with the remaining soil meeting the restricted residential soil cleanup objectives.[377] After the demolition of the building and the assessment of its underlying soils, the NYSDEC considered the installation of another ground water monitoring well within the main building footprint in addition to the three other monitoring wells on the site.[378] A follow up would be conducted the following year to examine possible contaminents in the monitoring wells and reviewed with the NYSDEC.[379] Future construction on the site was required in the report to include a soil vapor collection system set in a gravel base underlying new slabs.[380] The soils underneath the concrete slab on the island between the raceway and the gorge were extracted to two feet below the ground surface and taken at four core locations.[381] In the event that the core samples exceed the required residential levels for contaminents, the slab would be removed and the extent of the pollution would be assessed.[382] A soil cleanup objective for lead of 400 ppm was set by the NYSDEC and NYSDOH and applies to any remaining demolition debris to protect the environment and public health.[383]

Demolition on the site was not started until the spring of 2009, when the factory building that for more than a century produced worldclass Ithaca Guns had its finale. Work stalled in August after cost overruns reached almost $1 million and a request was

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[376]Ibid., 2.

[377]Ibid.

[378]Ibid.

[379]Ibid.

[380]Ibid., 3.

[381]Ibid.

[382]Ibid.

[383]NYSDEC, “Fact Sheet : Ithaca Gun Demolition Project,” (October 2008).

filed to move funds slotted for redevelopment to the cleanup efforts.[384] In the meantime, piles of debris were left on site, the contents of which proved to have high levels of PCBs and had been left uncovered for long periods of time.[385] After ongoing negotiations with the DEC, work finally began again a year later in July of 2010 with workers back on-site preparing to ship the debris piles to a landfill.[386] With the cleanup effort getting back underway, plans for redevelopment are in the site's immediate future. Frost Travis of Travis & Travis, the firm partnering with Fall Creek Redevelopment, now envisions building either 45 condominiums or luxury apartments costing between $200,000 and $400,000, up from the original 33-unit condo complex of about the same price.[387]

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[384]Krisy Gashler, "Council OKs reallocation for Ithaca Gun site cleanup; County lawmaker, activist protest decision to cover cost overrun," *The Ithaca Journal*, August 2009: sec. A, p. 4.

[385]Krisy Gashler, "No word from state on Ithaca Gun funding," *The Ithaca Journal*, November 2009.

[386]Krisy Gashler, "After a year, Ithaca Gun work resumes," *The Ithaca Journal*, July 2010.

[387]Ibid.

Fig. 59. Travis and Travis, presentation board of proposed development.

Fig. 60. Demolition of main factory building. (Photograph by Leigh McGonagle, March 27, 2009).

Fig. 61. View from slope above Gun Company of factory demolition. (Photograph by Leigh McGonagle, March 27, 2009).

Fig. 62. Demolition of main factory building. (Photograph by Leigh McGonagle, April 18, 2009).

Fig. 63. Main factory debris removal. (Photograph by Leigh McGonagle, April 18, 2009).

Fig. 64. Demolition of main factory building. (Photograph by Leigh McGonagle, April 26, 2009).

Fig. 65. Pile of contaminated soil and debris. (Photograph by Leigh McGonagle, April 26, 2009).

PART 2. EXISTING CONDITIONS

CHAPTER 8.

INTRODUCTION

This section of the report describes the existing conditions of the Ithaca Gun Company site, including the former factory property and the Ithaca Falls natural area. The existing conditions are recorded with text, photographs, and plan representing the appearance of the site in 2010. The section is organized according to the landscape characteristics defined by the National Park Service's *A Guide to Cultural Landscape Reports*, which defines thirteen characteristics ranging from large-scale patterns to site details, which may be present in the landscape. Individual associated features are grouped under these categories.

CHAPTER 9.

LANDSCAPE CHARACTERISTICS AND FEATURES

LAND USE

The City of Ithaca lies within the south central portion of rural Tompkins County in Central New York. The city relies in many ways on an education-based economy but is known as much for its prominent academic institutions and small, college town atmosphere as it's unique landscape, with tourism playing a strong economic role. Outside the city, agriculture remains the greatest land use in the region. The city's population has risen steadily over the past decade and the central position of the local universities in the economy has helped the region expand even in tough financial times, with the most common occupations among residents being post secondary teachers or other educational services.[388] Within the city limits, comprising roughly 5.5 square miles with an approximate density of 5,500 people per square mile, the majority of acreage is zoned for residential use.[389] Higher density housing surrounds the downtown commercial corridor as well as the perimeter of Cornell University. The Ithaca Gun Company falls within the University Hill neighborhood on the fringe of Cornell's boundary and caters primarily to student housing, serving as a transitional area between the university and the greater Ithaca population. Much of Ithaca's industries are delegated to the periphery of the city along the Cayuga Inlet, the most visible exception being the Gun Company site in the midst of two neighborhoods characterized by private residences. While the formal designation of the site as industrial has been changed in recent years to be zoned as residential, development of the site to reflect such a change has been slow.

The Ithaca Gun site is located less than a mile from the city's downtown district

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[388]*Ithaca, New York*, Onboard Informatics, 2010, http://www.city-data.com/city/Ithaca-New-York.html.

[389]Ibid.

and within a quarter mile of Cornell University. It's bordered on three sides by student housing and two residential neighborhoods, which include light commercial businesses. To the east, the Sigma Nu Lodge and private residences on North Willard Way and Willard Way Loop respectively directly abut the site. Across from the fraternity on North Willard Way is the Ithaca Religious Society of Friends, which owns the Burtt House, a sanctuary on Fall Creek widely known as the Quaker Overlook, a vantage point above the falls frequented by the public. The City owns a portion of the Overlook as well in an extension of North Willard Way. Residential homes occupy the hillside to the east, transitioning to Cornell student and fraternity housing along Fall Creek.

To the south, Gun Hill Residences, a student housing apartment complex at 210 Lake Street was built in 1990[390] and is owned by developer Mark Finkelstein, a one-time owner of the Ithaca Gun Company property. The apartments occupy three acres of the property's 5.54 total acreage, of which the remaining 2.54 acres is comprised of undeveloped land[391]. The parcel is zoned as part of a R-3a multi-family residential district and includes 175 apartment and dorm style units[392]. Beyond the apartments, a wooded slope owned in part by Gun Hill Residences acts as a buffer between student housing to the east and residential neighborhoods to the west, with Cornell's West Campus dormitories on Stewart Avenue southeast of the site. To the west, private residential homes begin opposite the site across Lake Street and extend into the Fall Creek Neighborhood, which includes Ithaca High School and Fall Creek Elementary School, both in close proximity to the site. The Fall Creek Inn at the corner where Lake Street and East Falls Street intersect has long been an establishment across from the park entrance. To the north of the site, the Ithaca Falls Natural Area is specified as a public recreational

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[390]Municipality of City of Ithaca, *Property Details - Tax ID: 28.-4-3*, 2010, http://asmsdg.tompkins-co.org/propdetail.aspx?swis=500700&printkey=02800000040030000000.

[391]Ibid.

[392]Ibid.

area owned by the City allowing visitors access to Fall Creek Gorge and Ithaca Falls, the base of which is over two hundred feet down from the Gun Company property.

The Ithaca Gun Company parcel is currently owned by Fall Creek Redevelopment partnered with Travis and Travis in designing the long-awaited new development. The future of the site lies in residential housing, with an allowance for publicly accessible parkland. While the Gun Hill apartment buildings on the south side of Lake Street provide student housing, the 45-unit condominium complex currently proposed by the site's developers appeal to the high-end residential market. The site has historically supported industrial enterprises, including milling operations in addition to the Ithaca Gun Company's renowned production of firearms. With the approval of the City's zoning board, the developers have profitably replaced the site's long-standing zoning designation from industrial to residential use. The unsuccessful attempt by the developers to raise the maximum building height from 40 feet to 70 feet leaves them with plans for four story condos while possibly increasing the number of units to maintain economic feasibility. Preservation of the adjacent Island area as parkland is integral in the successful development of the site. A public easement along the proposed development would provide a walkway to the Island, allowing the public admittance to a dramatic overlook of Ithaca Falls previously unobtainable. A more complete discussion of the redevelopment plans for the site is found in Chapter 7.

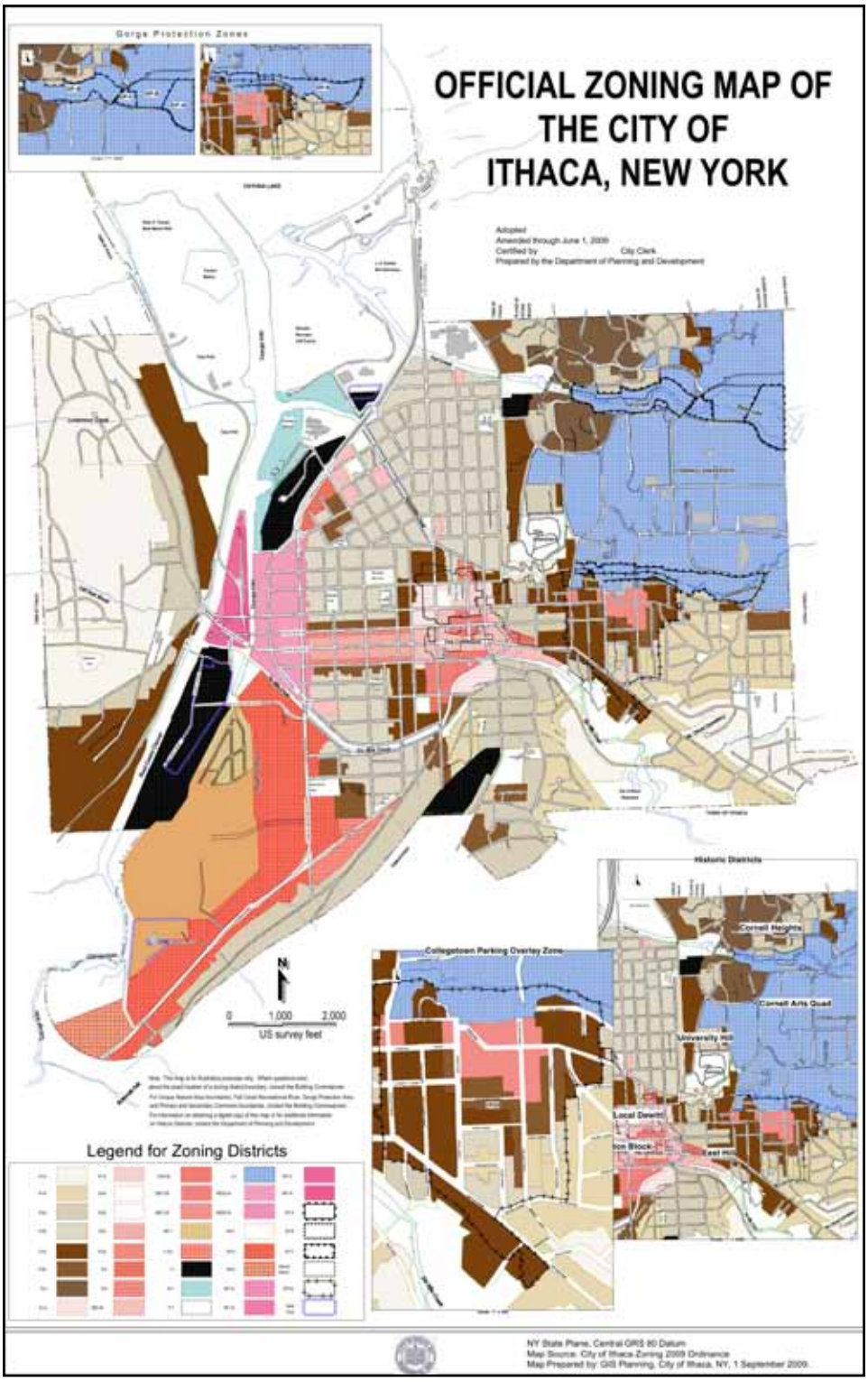

Fig. 66. Zoning map showing the Ithaca Gun property and parking lot to Lake Street zoned as I-1, with the Ithaca Falls Natural Area zoned as P-1 and excluded from the protected gorge area. (City of Ithaca Dept. of Planning and Development, *Official Zoning Map of the City of Ithaca, N.Y.* [map], 2009, Scale not given, City of Ithaca Mapping and Demographics, http://www.ci.ithaca.ny.us/index.asp?Type=B_BASIC&SEC={96D7CEA6-1362-45A6-A33B-C97D436BF5C5}).

Fig. 67. Basin of Ithaca Falls in summer. (Photograph by author).

Fig. 68. Site of the demolished gun factory with the Gun Hill Apartments in the background. (Photograph by author).

SPATIAL ORGANIZATION

The greater organization of the site, defined by the limits of the study boundaries, which includes the Ithaca Gun Company property as well as the Ithaca Falls Natural Area, Gun Hill parking lot, and Quaker Overlook, follows an east-west orientation most noticeable in its industrial history. The course of the raceway delineates that axis through the site, congruent with the slope. In the past, the mills and other enterprises along Fall Creek worked in tandem with the sluice, reliant on its waters for hydropower. Because of its importance, the channel determined the layout of the site and therefore may be deemed the backbone alongside which industries were built.[393] The raceway is only one of the dominant landscape features that demarcate the distinct spaces within the site, including topography and vegetation, in addition to the waterways that flow through the site's boundaries. These features define spatial zones throughout the site, creating distinct enclosures that only sporadically work in conjunction with one another.

While the order of the site is first down the east-west axis of the raceway and the slope, the orientation of the Ithaca Gun Company parcel is perpendicular to this arrangement with a transect along the north-south axis. While most of the Gun Company buildings have been razed in the past year and the site is no longer accessible without authorization, this formation is still present. Entry from Lake Street follows an access road along the foundation lines of the demolished buildings and across a bridge spanning the raceway to the Island area. The factory itself was built up along that axis, beginning with the original structures dating to the mid-1800s on the south bank of the millrace, with several additions constructed to the south, culminating with the main building fronting Lake Street in 1917. Only remnants of the building foundations remain today, and the demolished site is defined by the features that surround it. Steep, vegetated slopes mark the east and west boundaries of the property, while the northern end of the clearing

[393]Kathryn Gleason, (Cornell University) in discussion with the author, October 2010.

ends at the sharp cut of the raceway. Across the bridge, the concrete platform, which affords the visitor views of Ithaca Falls and the Cayuga Valley in the distance in seasons where vegetation permits, is again defined on all sides by the site's dramatic topography and parallel waterways. The Island slopes up to the east and off a sheer drop directly west of the platform, while the raceway bounds the space to the south, with the gorge to the north. While these two areas work together, they lack a circulation network that would connect them to the rest of the site.

This self-contained layout is repeated by the site's discrete components down the slope. The properties within the study boundaries do not function on the site as parts of a whole. This, then, is a deviation from the historical organization of the site. For over a century, from the first quarter of the 1800's to the mid 1900's, the site functioned along the raceway, with flumes running off of it to service each successive industry down the slope. Today, only faint traces of the flumes remain, while ruins of the mills still hold a presence on the site. Over this, a new order to the site has developed. Down the slope to the west of the demolished factory building, the Gun Hill parking lot, with two entrances off of Lake Street, runs parallel to the layout of the Ithaca Gun property, while being completely separate. An expansive lot, the property does not lend itself to the greater flow of the site, as it serves only the student housing complex across the street and is unavailable to visitors to the natural area.

On the western border of the site, two gravel parking lots off of Lake Street provide visitor parking to the park, however, they are bounded to the north by the ruins of the Fall Creek Flour Mill which stand as a visual and physical barrier, blocking the entrance to the park. The relatively flat, grassy entrance to the Ithaca Falls Natural Area on the other side of the remaining wall is a distinct spatial zone with the northern and eastern edges indicated by the rim of the foundation walls of the mill, which drop up to twelve feet in spots to the floodplain of the gorge below, and a vegetated border marking

the perimeter. The site constitutes a manufactured landscape and its distinct zones, while formed by past and present industries and development, are in large part defined by the site's natural systems.

TOPOGRAPHY

The City of Ithaca is situated within the glaciated portion of the Allegheny Plateau with a varied landscape of gorges, floodplains, glens, and valleys. The region surrounding the head of Cayuga Lake is marked by heavily sloped topography as indicated by US Geological Survey Maps, punctuated by the deep troughs of the gorges unique to the area. Fall Creek gorge is exemplary of the hanging valleys carved by postglacial action, with the Ithaca Gun Company site positioned at the culmination of its waters, Ithaca Falls, plunging 130 feet into the basin below. The falls currently stand at a point about 750 feet upstream from the Lake Street Bridge near the base of the site. The topography of the site was evaluated using a 2002 topography map of the Ithaca Gun Company property produced by Earth Tech for the purposes of the EPA cleanup, in conjunction with visits to the site.

The steep topography of the site is dominated by the waterways that cut through its hillside; the cliffs on the northern border that mark the channel of the gorge, the creek that runs through it over a series of waterfalls both great and small, and the parallel conduit actively carved to form the tunnel and raceway. The raceway divides the Island from the rest of the site forming two distinct slopes that markedly differ in their decent from east to west. Flat ledges smoothed out of the slope provide the level land on which the area's industry was built. When describing the site's topography, it is most effective to divide it into regions: the slope from the Sigma Nu Lodge to the western site border on Lake Street containing the Ithaca Gun Company property, the Quaker Overlook and Island area, the entrance to the Ithaca Falls Natural Area and the Fall Creek floodplain, and the cascade of the raceway.

Beginning with the Sigma Nu property and adjacent private residence to the east, a vegetated slope with a gradient between thirty and fifty percent falls off to the

relatively level access road on the Gun Company acreage. The grading across the Gun Company land has changed drastically with the demolition of the main factory buildings, creating a slope from the access road where the building's foundations once stood. At the western edge of the foundations, an elevation of 530 feet above sea level, unchanged by the demolition, again slopes off the flat ledge occupied by the factory over a slope with a gradient greater than forty percent in most places to the upper and lower Gun Hill parking lot. From Lake Street, two entrances into the parking lot divide it into an upper and lower lot, both of which border the slope from the Gun Company. It is along this slope that the public walkway accessing an Island Overlook Park is proposed. At the base of the slope on the northern end of the lower parking lot, the smokestack and other footprints of the factory stand on moderately level ground. From this area and following around the western border of the parking lot, a steep, wooded slope with an average decline of 50 percent gradually levels out towards Lake Street with a cross slope to the north. Slightly northwest of the smokestack, a gravel parking lot for visitors to the natural area is graded on a mound built with fill over the ruins of the Ithaca Paper Company, accessible from Lake Street via a curved driveway.

Across the raceway and parallel to this slope, the Quaker Overlook begins northeast of the Sigma Nu fraternity. Access to the Overlook from North Willard Way slopes down to the north before reaching the approximately 150-foot drop into the gorge below. A gradual and heavily vegetated slope to the west from the Overlook comes to a deep, perpendicular man-made cut in the cliff walls, used historically to service the original wooden flume powering the industries along Fall Creek. Across this outlet, spanning only ten feet at the most, the Island slopes down to the west at a moderate rate, between fifteen to thirty percent in most places before reaching the concrete platform to the north of the main Gun Company factory and the site of several outbuildings on the Island. From the western edge of this platform, at an elevation nearly equal to the parallel slope from the gun factory to the parking lot to the south, a rocky cliff, heavily polluted

with lead from debris dumped during the time of the factory's operation, drops to a point some thirty feet lower down. This point on the Island is marked by an expanse of grass and other vegetation undesirable for this type of landform and discussed in detail later in the Landscape Characteristics section on vegetation. Across this area the slope is gradual for about forty feet, after which it becomes greater than forty percent in some places for a span of about fifty feet before reaching another, more gradual slope at an elevation around 480 feet, a decent of fifty feet from the concrete platform. From there, the Island ends at the terminus of the raceway where a sheer drop in some places reaches the base of the channel, about 150 feet lower than the slope's origins at the Quaker Overlook.

At the site's western border, the Lake Street Bridge crosses Fall Creek at an elevation of 420 feet above sea level. South of the bridge, the entrance to the Ithaca Falls natural Area stands on the remains of the Fall Creek Flour Mill, with relatively flat topography sloping gently to the west before falling off the remaining foundation walls. A wooden staircase negotiates the change, allowing access to the floodplain and falls at the base of the gorge walls, which demonstrate a slightly rolling topography, generally dictated by debris left by the water's shore but maintaining an elevation around 390 feet. Near the eastern end of the floodplain towards the base of the falls, the rock cliffs rise over 150 feet to the top of the ridge. Back at the park's entrance, a slight incline to the south leads to a level area bordered by the ruins of the flourmill. From there, a wooded lot with the visible remains of building materials slopes up towards the gravel lot previously depicted.

The raceway itself cuts a ravine through the length of the site, beginning at the tunnel directly above the falls, measuring twelve feet by fifteen feet in height and width, with a length of 200 feet. From the tunnel, water historically flowed through the channel over four small dams, emptying just before the Lake Street Bridge. Today, only standing water pervades the former waterway, but the rocky slopes are visible in the absence of

the water that once flowed through them. Starting from the mouth of the tunnel, the base of the raceway slopes almost imperceptibly to the west, while the steep banks on either side cover inclines upwards of fifty percent. At the end of this stretch, the stream reaches the first sluice control, through which the water drops almost ten feet. From there, the next section of the raceway runs to the iron bridge which crosses from the site of the Gun Company factory to the Island, with a median gradient of thirty-five percent. Beneath the bridge, the channel falls forty feet into a plunge pool. From the pool, measuring roughly twenty-five feet in diameter, the raceway descends another twenty-six feet to the remains of one of the dams. This dam marks a drop of twenty feet to a rock ledge below. From here, the raceway widens to form a sort of bowl containing a wetland, littered with debris on it's southwestern slope from the Ithaca Paper Company, which follows the incline to the gravel lot. During the EPA cleanup of the site, these areas were divided into the Upper, Middle, and Lower Mill Race Areas respectively. At the western edge of the basin, a concrete retaining wall maneuvers a corner to the north, lining the end of the raceway to its last point where it tumbles off the rock face of the gorge to the floodplain below.

Fig. 69. Profile view of Island from across gorge showing the platform at left with the steep slope of the middle Island to right. (Photograph by author).

Fig. 70. Looking northeast up the Island from the base of the raceway. (Photograph by author).

CIRCULATION

As depicted in previous chapters, the study boundaries of the site encompass several disconnected parts, primarily the Ithaca Gun Company property, the Ithaca Falls Natural Area, the vast parking lot serving the Gun Hill Apartments, and the Quaker Overlook. Circulation networks within these discrete systems are deficient at times, and connections between them are almost non-existent. When thinking about the future of the site, it is of great importance to consider a cohesive means of movement throughout the site as a whole, providing greater opportunities to residents and visitor alike.

Today, access to both the former Ithaca Gun site and the Ithaca Falls Natural Area is off of Lake Street, which acts as the site's southern and western boundaries. Visitors enter the park from the west where the only formal parking area is provided by a gravel lot. The parking lot sits atop a mound formed by infill over part of the Ithaca Paper Company foundation. No pathway exists linking visitors through the parking lot to the entrance of the park. A sidewalk runs along the west side of Lake Street adjacent to the park entrance only as far as the intersection of Lake Street and East Falls Street after which it terminates into lawn bordered by thick vegetation. The sidewalk does not begin again until Lake Street makes a corner to the south, just past the entrance to the gun company site. Along this stretch, pedestrian traffic uses the sidewalk on the south and east side of Lake Street, accessing the Gun Hill apartments to the south and the residences of the Fall Creek Neighborhood to the east. The paved lot adjacent to the western border of the Gun Company site services the tenants of the student housing complex across the street, and does not include guest parking to the Natural Area or the Gun Company property, emphasizing the discrete nature of the site's components.

The lawn marking the entrance to the park beside the Lake Street Bridge is located where the flour mills once stood and provides some seating and minimal signage

for visitors. A wooden staircase provides access to the floodplain and the stream's waters. A worn foot trail gives way to rockier paths that negotiate the vegetation and debris along the creek's southern bank before reaching the base of Ithaca Falls, if the season permits. No formal path exists, only the way cleared by foot traffic, and where high water inhibits plant growth or the buildup of rubble. From the south side of the park entrance, a narrow foot trail crosses over the terminus of the raceway channel and up the slope of the lower and middle Island, stopping at the rocky cliff partially covered by tarps below the base of the concrete platform on the Ithaca Gun property.

The access road for the Gun Company is still present and remains the main entry today, although it is only accessible with permission, as the area has been gated by chain-link fencing throughout its recent history. The demolition of the gun factory buildings has left an expanse of leveled ground and debris from the building's foundation, with the access road running along the site's eastern border to the bridge spanning the raceway, which provides pedestrian and vehicular access to the platform on the Island, once supporting the outbuildings of the factory. A minor footpath leads up the slope of the Island along the gorge from the platform. Until the past year, a small wooden bridge at the northern end of the Island across the raceway above the tunnel mouth, which connected the upper Island slope to the Quaker Overlook. The main entrance to the Overlook is from North Willard Way, with only on street parking available.

Fig. 71. Gun Hill Parking lot, facing north on Lake Street. The sidewalk does not wrap around that side of the street, closest to the Gun Company. (Photograph by author).

Fig. 72. Looking northwest from the gravel lot off of Lake Street, south of the park entrance. (Photograph by author).

Fig. 73. Entrance to the Ithaca Falls Natural Area from across Lake Street. The sidewalk ends in front of the Fall Creek Flour Mill foundation, prior to reaching the gravel parking lot that services the park. (Photograph by author).

Fig. 74. Foundation of the flour mill marking the edge of the park's entrance lawn, with stairs in the lower left corner to the path following the creek. (Photograph by author).

Fig. 75. Staircase leading to the creek's floodplain at the southeast corner of the park entrance. (Photograph by author).

Fig. 76. Base of staircase with path leading east to Ithaca Falls. Foundation of Fall Creek flour mill at left. (Photograph by author).

Fig. 77. The bridge from the Gun Company factory to the concrete platform on the Island. (Photograph by author).

Fig. 78. A chainlink fence divides the Island above the platform and restricts access. (Photograph by author).

VIEWS AND VISTAS

The dramatic topography of the site affords it several spectacular viewsheds. Its position along the Fall Creek Gorge has long been prized for the sublime views of Ithaca Falls that it presents from multiple vantage points. The site's high point on the steep, western facing Gun Hill slope offers a sweeping vista of the greater Ithaca area and the Cayuga Lake Valley beyond. Many of these historical prospects are described in Chapter 4 on early tourism to the site, while the focus in this chapter is on the viewpoint's extant conditions as shaped by the site's industrial influences.

Although access is restricted to the Ithaca Gun Company property as cleanup and demolition efforts continue, its aspect above the falls along the site's northern border provides a unique prospect. The concrete platform that sits on the middle Island was once occupied by the factory's outbuildings as accessed by an iron bridge spanning the raceway, and now holds great development potential because of its accessibility and the impressive views of the falls below. It has been a point of interest in the discussion of future re-development plans on the property and has been included as part of a proposal for a public easement to allow general admittance to the scenes long restricted to visitors. From this point on the Island the imposing cliffs on the opposite side of the gorge can be taken in, the view of which is only slightly impeded by vegetation on the southern face of the gorge. At the western edge of the platform, the ledge falls sharply over a rocky cliff to the lower Island area, and the breach in vegetation allows for a panorama of downtown Ithaca, past the Lake to the hill of the western valley in the distance. These views have been held by residents of the properties that border the site to the east for decades, and were upheld by a zoning debate concerned with raising the maximum building height of the future development on the site that may have disrupted their sight. Further up the slope, the Quaker Overlook allows for an expansive vista along the gorge from the brink of the Ithaca Falls cascade in the west, to the Stewart Avenue Bridge in the east,

providing an overhead view of the dam, marking the head of Ezra Cornell's tunnel below. Unlike the Gun Company property, the Overlook, owned in part by the Ithaca Religious Society of Friends and the City, is a frequented spot open to the public.

The Ithaca Falls Natural Area accessed from the site's western border includes a notable view corridor through which the falls are slowly revealed, culminating in the immediate spectacle of the waterfall. The Lake Street Bridge, just past the entrance to the park, presents a remarkable head on view of the falls, also depicted in Chapter 4 as the starting point for visitors or passersby of the falls. Within Ithaca, this is the first point from which the falls might be viewed, especially from that direct angle. While vehicular traffic is emphasized, the bridge is used by pedestrians as a viewing platform and vehicles often slow or stop upon catching a glimpse of the falls, otherwise hidden from view in the city. From the grassy plateau of the park's entrance, idyllic scenes of the Creek are enjoyed from several benches placed around the area's northern and eastern edges. Views of the falls are obstructed from this point by heavy vegetation in the Creek's floodplain and southern bank. On the path along the stream's shore, the scene is of the high gorge walls enclosing the rapids as it navigates clusters of sycamores and undergrowth to uncover the cataract itself at a point about fifty yard away. The auditory senses are stimulated during this walk, heightening the feeling of anticipation as the roar of the falls indicates the increasing proximity to Ithaca's greatest waterfall. Season and water level determine the nearness and position from which the falls might be viewed. In times when water is low, as in the summer months, one can walk or swim to fall's base, even to the northern bank, while after a freshet, especially in late fall to spring, one might only be able to take in the rushing waters from some distance back on the more easily traversable southern shore.

Another way to take in the scenery of the gorge follows the traces of the historical gorge walk discussed in Chapter 4. Vistas of the falls and the Island on the

Gun Company property can be seen from points along the northern ridge of the gorge. Above the falls, the tunnel provides access to the viewshed upstream mirrored by the Overlook, but amplified by the viewer's position at the at the water's level, culminating in the tunnel view through the gorge walls to the second cataract upstream from Ithaca Falls, historically called Forest Falls. Views of the gorge and falls are perhaps the greatest tourist attraction to the site, however, dissimilar to other gorge parks in the area, the Ithaca Falls park lacks the same exposure and awareness, resulting in far fewer visitors. Many other factors contribute to the public's limited familiarity with the site, but the spectacle of the falls, distinct from any other in the region, continues to draw visitors as it has for the past two centuries.

Fig. 79. View from the head of the tunnel of the apex of the falls at left to the Stewart Avenue Bridge at right. (Photograph by author).

Fig. 80. View from the Island on the Gun Company property across the valley. When the vegetation isn't so lush it's possible to see downtown and the lake. (Photograph by author).

Fig. 81. View through the gorge from the Overlook to the lake. (Photograph by author).

Fig. 82. Ithaca Falls during low water, taken from the creek. (Photograph by author).

NATURAL SYSTEMS AND FEATURES

Located within the greater Finger Lakes Region, Cayuga Lake historically provided a transportation route for trade. The close proximity of the lake, fed primarily by Fall Creek, placed the site at a strategic location on the waterway system, connecting it to the rest of the state and the country. The Fall Creek gorge is an integral part of the site, playing an essential role in the development of the area first as an industrial center in Ithaca and now as an extensive residential neighborhood that has grown up around the former industrial hub. As previously mentioned, the topography of the creek and the location of Ithaca Falls made it ideal for water-powered operations.

Aside from its role in the site's industrial past, Fall Creek is a fundamental part of the Cayuga Lake Watershed, as well as the primary resource in the Fall Creek sub-watershed. The sub-watershed drains an area of 128 square miles with several contributing tributaries, of which Fall Creek is the largest[394]. The health of the Fall Creek water system is vital in the overall wellness of the Cayuga Lake Watershed, with the natural environment, land use, and human interaction playing a role in this effect. While the Ithaca Gun Company owes its location and success to the hydropower provided by the creek, the operation's relationship with the waterway has not always been one of mutual respect. Industrial discharge and the long-standing presence of exposed lead shot on the site can't be ignored as contributing factors in the dispersion of high concentrations of heavy metals in the sediments of Fall Creek.

The Fall Creek corridor is home to numerous bird species, and the Ithaca Falls site lies between two prime birding spots at Beebe Lake to the east and the Fuertes Bird Sanctuary to the west where the creek enters Cayuga Lake. Because of its urban setting, it is not an ideal habitat for wildlife, however the Fall Creek Gorge supports a diversity

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[394] Cayuga Lake Watershed Network, "Issues in the Cayuga Lake Watershed," (Interlaken), 1.

of plant life unique to the various conditions and landforms present on the site. Prior to the revegetation efforts in tandem with the cleanup earlier in the decade, the Ithaca Gun site was covered in large part by vegetation from post-industrial succession, including non-native and invasive species. The Natural Areas Commission, a community advisory group concerned with the conservation of the city's Natural Areas, counseled the EPA in the removal of invasive species, transplanting established specimens to be replanted, and suggesting native species appropriate to the site to revegetate the area.[395] A complete description of the site's vegetation is found in the next section.

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[395]These efforts are discussed further in Chapter 6.

VEGETATION

The Ithaca Gun site lies along the Fall Creek corridor, a protected habitat strongly influenced by its geologic history. For more than a century, the industrial presence on the site cleared it of much of its natural vegetation. At present, the extensive footprint of the former Gun Company factory is the main indicator to the site's industrial past. The remainder of the area encompassed by the study boundaries, aside from the Gun Hill parking lot, has become increasingly wooded. Successional vegetation, invasive species included, has cropped up around the remaining ruin, covering the majority of the site. However, revegetation efforts during the time of the EPA cleanup ensured that the site might be properly restored to a more natural state. While the site is listed as urban land according to the USDA Soil Conservation Service Soil Survey of Tompkins County, New York, a designation applied to all properties within the city limits, surficial soils in the vicinity of Fall Creek are generally silt loams and loams, being well-drained, medium-textured soils of recent alluvial deposits.[396]

Varying conditions exist within the boundaries of the site resulting in a diversity of plant life, including species unique to the area. The raceway channel for instance has characteristically different vegetation from the dry upper slopes of the island. A plant survey conducted in 1980 by the Cornell Plantations classified these regions generally as the Island area, which includes the Quaker Overlook, the floodplain of Fall Creek from Ithaca Falls to the Lake Street Bridge, the gorge walls and lower portion of the raceway, the aquatic habitat behind the falls, and the lawn area along Lake Street including the park entrance.

The Island constitutes a landform typified by sparse areas with shallow soil cover

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[396]John A Neeley and Edward B Giddings, *Soil Survey, Tompkins County, New York*, Vol. 25 (Washington: U.S. Department of Agriculture, Soil Conservation Service, 1965).

over a bedrock of shale.[397] As per the Finger Lakes Sheet of the Geologic Map of New York 1970, the bedrock underlying the site has been mapped as Upper Devonian, West River Shale, Genundewa Limestone, and Penn Yann and Geneseo Shales of the Genesee Group and Tully Limestone.[398] The Surficial Geologic Map of New York indicates that the unconsolidated sediments in the vicinity of the site consist of lacustrine silt and clay, which were deposited in proglacial lakes, and are generally calcareous, having low permeability of variable thickness.[399] The lower slopes of the Island display these traits well, indicating the vitality of this particular microclimate. However, the slope immediately below the concrete platform on the Gun Company property has had a long history of disturbance. Continual dumping of industrial debris, including trash and coal ash, some of which is still visible today, masked the topography of the almost vertical rocky cliff with a gentler slope until it was uncovered in the cleanup. Following the cleanup, a greater amount of loam than required, as much as 6-8 inches, replaced the contaminated soil in this area and many others on the island.[400] This soil is rich and loamy, holding more moisture than what would occur naturally on the site.[401] The lack of shade covers on the slope just below the concrete slab has resulted in an undesirable growth of invasive species, creating a light, grassy area uncharacteristic of the landform requiring only thin groundcover. An excess of tall golden rod and horsenettle for example is indicative of the surplus of replaced topsoil.[402] Several species planted and seeded during the revegetation, however, have survived in these less than ideal conditions,

[397]Robert Wesley, LA7010 Site Visit, Ithaca, New York, October 2010.

[398]Fisher, Donald W; Isachsen, Yngvar W; Rickard, Lawrence V; Cartech Inc. "Geologic Map of New York" [map]. 1:250,000. New York State Geological Survey, no. 15, Finger Lakes sheet. Albany: University of the State of New York, State Education Dept., 1970.

[399]Cadwell, Donald H; Muller, Ernest H. "Surficial Geologic Map of New York" [map]. New York State Geologic Survey, no. 40, Finger Lakes sheet. Albany: New York State Geological Survey, 1986.

[400]Sarah Steuteville and Robert Wesley, Ithaca Natural Areas Commission, LA7010 Site Visit, Ithaca, New York, October 2010.

[401]Ibid.

[402]Ibid.

including a sassafras and black oak specimen each, hackberry, talus slope penstemon, and native tree species are regenerating, while previously undisturbed areas along the cliff remain in that condition.[403]

Above the platform, the Island stretches up the slope before reaching a chain-link fence that separates the area from its uppermost range. The vegetation in this section was also disturbed by the cleanup, though the native oaks present during the site's remediation were unaffected. Through that time, the Natural Areas Commission's endeavors in rehabilitating that section of the Island included the removal of the invasive Multiflora Rose and replacing it with the native Carolina Rose, seeding of goldenrod and aster, and planting blueberry shrubs which were marked across the site by blue flags.[404] Many of the rose specimens are still present today, as are the goldenrod and aster, however the majority of the blueberry plants haven't survived, due in large part to the incorrect pH level in the replacement soil.[405] East of the fence, the effects of the unfavorable soil are seen again in the pervasion of tall goldenrod and the failure of the planted blueberries. In spite of this, native grasses existent prior to the cleanup thrive today and fragile communities of moss and lichen endure along the cliff's edge.[406] Woody plants including seeded White Ash, Chestnut Oak, Eastern Hemlock, and Pitch Pine, are several beneficial species identified in the most recent attempt at updating the plant inventory.[407] Overall this area of the Island has been marked by success, despite the possibility of deleterious effects of the imbalanced soil.

Further up the slope, lilac and forsythia plantings at the Quaker Overlook have continued to spread from their initial locations. Similarly, specimens of creeping

[403]Ibid.

[404]Ibid.

[405]Ibid.

[406]Ibid.

[407]Ibid.

bellflower, white mulberry, and honey locust are present on the site's xeric upper slopes from planted or seed sources.[408] European Privet, identified recently at the Overlook site, is a problematic species for natural areas with fruit that attracts birds and promotes its spread.[409] Rare and native species of goldenrod are also found in this section of the site.[410]

Other areas of the Island also display the emergence of varying invasive plants, including a large presence of Norway Maples throughout. Catalpa seedlings at the base of the Island's slope, although not considered invasive, constitute a non-native species and therefore undesirable in the wide spread that they currently cover as do the more insidious honeysuckle specimens. As with other sections of the Island, the high volume of excessively nutrient rich soils has contributed to the high distribution of these disadvantageous species. Nonetheless, preferable native species pervade the area, perhaps more so than any other location on the Island as the volume of soil is not as high as in other locations. Seeded Indian grass and silverrod, a type of goldenrod, both have done well.[411] Sugar maples and chinkapin oaks that were planted on the slope up to the middle Island, below the platform have all grown well. The oaks were a less desirable choice to the chestnut oaks native to the site, but excel in the calcium-rich shale slag that covers the Island.[412] Blueberry plantings have also been successful on the slope, closer to the lower Island.

The 1980 inventory found the southern gorge cliffs in the spray zone of the falls to constitute the site's most perishable habitat, with twenty-one species dependent on dripping water, nurturing the site's scarcest plant, *Parnassia glauca*.[413] The cliffs and

[408]Cornell Plantations, "Ithaca Gun Plant Inventory," (1980).

[409]Steuteville & Wesley, 2010.

[410]Ibid.

[411]Ibid.

[412]Ibid.

[413]Cornell Plantations, "Plant Inventory,".

ledges under the falls themselves were found to be home to twelve herbaceous and aquatic species, while seven species of aquatic plants were found in standing water in the rock cut channel leading to the raceway.[414] While ongoing efforts to identify and evaluate the species present on the site today, these areas have not been surveyed since the initial inventory. The shore and floodplain along Fall Creek from the falls to the Lake Street Bridge supports over 150 species of woody and herbaceous plants, with goldenrod and sycamore prominent among them.[415] A great many plants non-native to Central New York were present on site prior to the cleanup. Members of the Common Council's Natural Areas Commission were present on site throughout the cleanup to aid in identifying and removing invasive species. This included several types of grasses and herbaceous plants as well as Norway maples, ailanthus, and other woody plants.[416] The lawn and park area along Lake Street contains fifty-two different species, half herbaceous and half woody.[417]

Volunteers and members of the Natural Areas Commission and the Cornell Plantations continue to reassess the success of the revegetation, a key element of this being an updated inventory. In general, the philosophy behind the revegetation of the site was to purchase several smaller plantings, rather than a few mature trees,[418] in order to have a greater distribution of plants appropriate to the site and necessary in its rehabilitation. A more complete description of the committee's involvement throughout the site's cleanup is included in Chapter 6, and a table, comparing the species present on the site during the 1980 Plantations inventory with those existing on the site today, is found in Appendix X, and contains a more complete list of the site's vegetation than mentioned in this section.

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[414]Ibid.

[415]Ibid.

[416]Ibid.

[417]Ibid.

[418]Steuteville & Wesley, 2010.

Fig. 83. Vegetation on the lower Island, dominated by Chinkapin Oaks with visible shale slag. (Photograph by author).

Fig. 84. View of the middle Island at the base of the cliff below the concrete platform. The area is marked by undesirable successional vegetation due to the high volume of replaced soil and a lack of shade cover. (Photograph by author).

Fig. 85. Upper Island vegetation with native grasses along the northern edge and original oaks. (Photograph by author).

BUILDINGS AND STRUCTURES

Prior to its demolition, the Gun Company buildings covered approximately 126,000 square feet, of which the main factory building occupied about 78,000 square feet.[419] Including the paved areas, this encompassed nearly seventy-five percent of the former Gun Company property.[420] Today only the brick smokestack, which bears the name of its previous owner, and the adjacent power plant between the Gun Hill parking lot and the raceway remain in their entirety. The smokestack conspicuously stands as a sort of beacon to the site's past, an iconic landmark reminding viewers of the site's industrial heritage. As one of the only surviving structures, with Ithaca Gun painted prominently in white down its length, the smokestack, along with the landscape the residual ruins, in the absence of other historic structures, serves a significant purpose in conveying the site's history. The future of the smokestack is unknown, with development plans for the condominium complex on the site under increasing financial pressure.

At the base of the slope, the foundations of the flour and paper mills, present at the entrance to the park and parking lot, provide a subtle reminder of the land's former use. The entrance to the Ithaca Falls Natural Area from Lake Street lies on top of the foundation of the Fall Creek Flour Mill. Level with the sidewalk, the lawn doesn't reveal its structural origins, it is only after the visitor follows a wooden staircase at the eastern edge of the entrance that they are at the ground plain of the creek's shore and can witness the remaining stone walls. The stonework has been filled in places with concrete, masking the channel that once ran through it as the final extension of the raceway. Along the southern edge of the entrance, the two intact stone walls of the flour mill, which come together at a forty-five degree angle in the southeast corner, reach up to six feet

[419]Prescott Environmental Associates, Inc., "Phase I Environmental Site Assessment : Former Ithaca Gun Factory Property, Falls Creek and Lake Street, Ithaca, Tompkins County, NY," (Chapel Hill, NC, October 29, 2001), 14.

[420]Ibid.

at their highest. Part of the northern wall remains, and today serves as a retaining wall, negotiating the grade change from the lower end of the entrance near the stairway. A cast iron conduit passes through the masonry, in the center of the eastern wall, connecting the mill in the past to the raceway via a flume, traces of which are still discernable. To the south, past the first small parking lot, a mound has been erected serving as another gravel lot for visitors over what is ostensibly the foundation of the Ithaca Paper Mill, using its rubble as fill. Building material and rubble is visible throughout the wooded area to the east of the lot, covering the slope leading down to the ravine near the end of the raceway.

A chain-link fence restricts entry into the Gun Company property and a majority of the natural area, including the raceway and middle and upper slopes of the Island. Access to the site is blocked from the east by the fence at the first raceway dam running the length of the slope at the base of the Sigma Nu property, continuing down Lake Street to the south and following the property line, and following the slope of the raceway down to the west, with signs on the fence at the southern Lake Street entrance warning against trespassing. While the Gun Company property has been officially off-limits to visitors for decades, its buildings, while standing, have been documented throughout the years, though perhaps not to the fullest extent.

Fig. 86. Remaining foundation of the Fall Creek Flour Mill off of Lake Street. (Photograph by author).

Fig. 87. Foundation of the flour mill from the creek. (Photograph by author).

Fig. 88. Anthropogenic evidence at right may be a bolt hole from the northern wall of the foundry that would have stood at this point on the lower Island. (Photograph by author).

Fig. 89. Stone foundation of the bridge crossing the lower raceway to the foundry on the Island. (Photograph by author).

Fig. 90. Foundation of the original gun factory building, inherited from the site's predecessor, the Ithaca Manufacturing Works. (Photographed by author).

Fig. 91. Base of the smokestack with rubble from the demolition of the surrounding buildings. In the background is the last remaining building on the site. (Photograph by author).

Fig. 92. The last intact building of the gun factory fronting the raceway used for supplying power. (Photograph by author).

Fig. 93. View of the bridge from the middle Island with the original building foundation at right. (Photograph by author).

Fig. 94. The bridge, rusted and overgrown, leading to the platform on the Island. (Photograph by author).

Fig. 95. Foundation of a work house on the Island and the northern end of the bridge. (Photograph by author).

Fig. 96. Shell of a small one-story outbuilding on the Island. (Photograph by author).

CONSTRUCTED WATER FEATURES

The site's major water feature is the raceway, which runs the length of the site and is arguably its organizing element. The channel was heroically constructed by one of Cornell University's founders, Ezra Cornell, and completed in 1832 in order to more efficiently supply power to the mills along Fall Creek. Prior to the construction of the tunnel and millrace, wooden flumes were hewn into the southern gorge wall as the source of hydropower for the early industries. Some of the supports for the flumes are still recognizable along the cliff near to the entrance to the floodplain.

The raceway has its origin directly above Ithaca Falls where a five-foot dam supplied a headwater pool, wherein water was diverted through the 200-foot long tunnel. The dam present on the site today is not the original that first serviced the millrace. A "box-like" flume carried water from a low dam, located about fifty feet further upstream, to the eastern mouth of the tunnel.[421] Remnants of the flume are visible today along the southern bank of the creek, with parts of the wooden structure still intact, as are sections of the initial dam, mostly obscured by a century's worth of sediment buildup. At the eastern wall of an outcropping in the gorge, the tunnel was situated beneath a vein of harder limestone and excavated through the rock by Cornell, under the service of Jeremiah Beebe, with the aid of five men.[422] Cornell was the first in Ithaca to employ the method of blasting with gunpowder, which he learned from observing the construction of the Cayuga and Seneca canal, and hired an Irishman who was familiar with the process, using 1,000 kegs of gunpowder to complete the channel over the course of six months.[423] The tunnel measures approximately fifteen feet wide by twelve feet high, being greater

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[421]Clarke, 15.

[422]Thurber and Marshall, 75.

[423]William G. Johnson, *Illustrated guide book of Ithaca Gorge, and its surroundings* (Ithaca, N.Y.: Andrus, McChain & Lyons, 1873), 19.

in width and height at the eastern mouth, with a variance within two inches across the base from end to end.[424] Within it stand the remnants of a wooden catwalk supported by concrete posts. During the time of its use, this platform, at a height of about four feet off the ground, allowed for access through the tunnel, with the waters rushing underneath,[425] and extended to the bridge crossing the raceway to the Island.[426]

Just beyond the mouth of the tunnel, a lateral cut through the gorge to the north provided a throughway for the earlier flume directly over the falls.[427] About fifty feet further, the almost imperceptibly graded channel carved through the rock hits a concrete bulkhead with a chain link fence dividing the Ithaca Gun Company parcel from the land owned by the Quaker Overlook to the east. From the bulkhead, two flumes diverted water to the machine and work shops of the Ithaca Manufacturing Company, before it was purchased by the Gun Company.[428] They were combined into one, delivering waterpower to the wood working building of the gunworks,[429] and is partially visible today as a leveled shelf along the southern wall of the raceway until it reaches the bridge that spans the waterway from the former Ithaca Gun factory to the platform on the Island previously occupied by the factory's outbuildings, and is no longer detectable. Up to the bridge, the millrace is bolstered by concrete walls, until it drops under bridge to the plunge pool below and continues through the steep sided ravine, falling over a rock cut dam, over which a bridge historically crossed the raceway to the foundry on the lower Island.[430] Between the plunge pool and the rock dam, the third wooden flume deviates from the

[424]Cornell, 51-52.

[425]Spence, 33.

[426]Clarke, 14-15.

[427]Ibid., 15.

[428]*Ithaca, New York* [map]. 1888.

[429]*Ithaca, New York* [map]. 1893. 1:50. "Digital Sanborn maps 1867-1970". Cornell University Library. http://resolver.library.cornell.edu/misc/4455183.

[430]*Ithaca, New York* [map]. 1888.

raceway to service the Ithaca Falls Paper Mill.[431] Just under the bridge, a chute carried water to the Ithaca Paper Co. next to its boiler room.[432] In recent years, traces of the flumes were still identifiable, but have faded almost beyond recognition. The ravine at the base of the dam has been enlarged since the time of the raceway's use, most likely due to the past demolition of the two paper mills, the foundations of which were located where a rocky slope of debris is now found. At the northwestern corner of this area, a concrete sluice way makes a perpendicular cut to the north through the foot of the hillside, before the raceway terminates, historically re-entering the waters of Fall Creek. The remains of a tunnel exist where the hydropower facilities of the Fall Creek Flour Mill emptied into the creek close to the Lake Street Bridge. Visible from Lake Street is a cast iron conduit, an offshoot of the raceway supplying power to what was the main building of the flourmill.[433] Only standing water is present in the waterway structures today, with a light flow especially after a rain event or melting snow, as they no longer serve a functional purpose.

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[431]Ibid.

[432]Ibid.

[433]Ibid.

Fig. 97. View from the head of the tunnel of the dam and the lifting mechanism that allowed water to pass through. At far right are the remains of the wooden chute that carried water from the original dam to the tunnel. (Photograph by author).

Fig. 98. View of the dam from above. The concrete sill has eroded and the front of the dam is exposed. (Photograph by author).

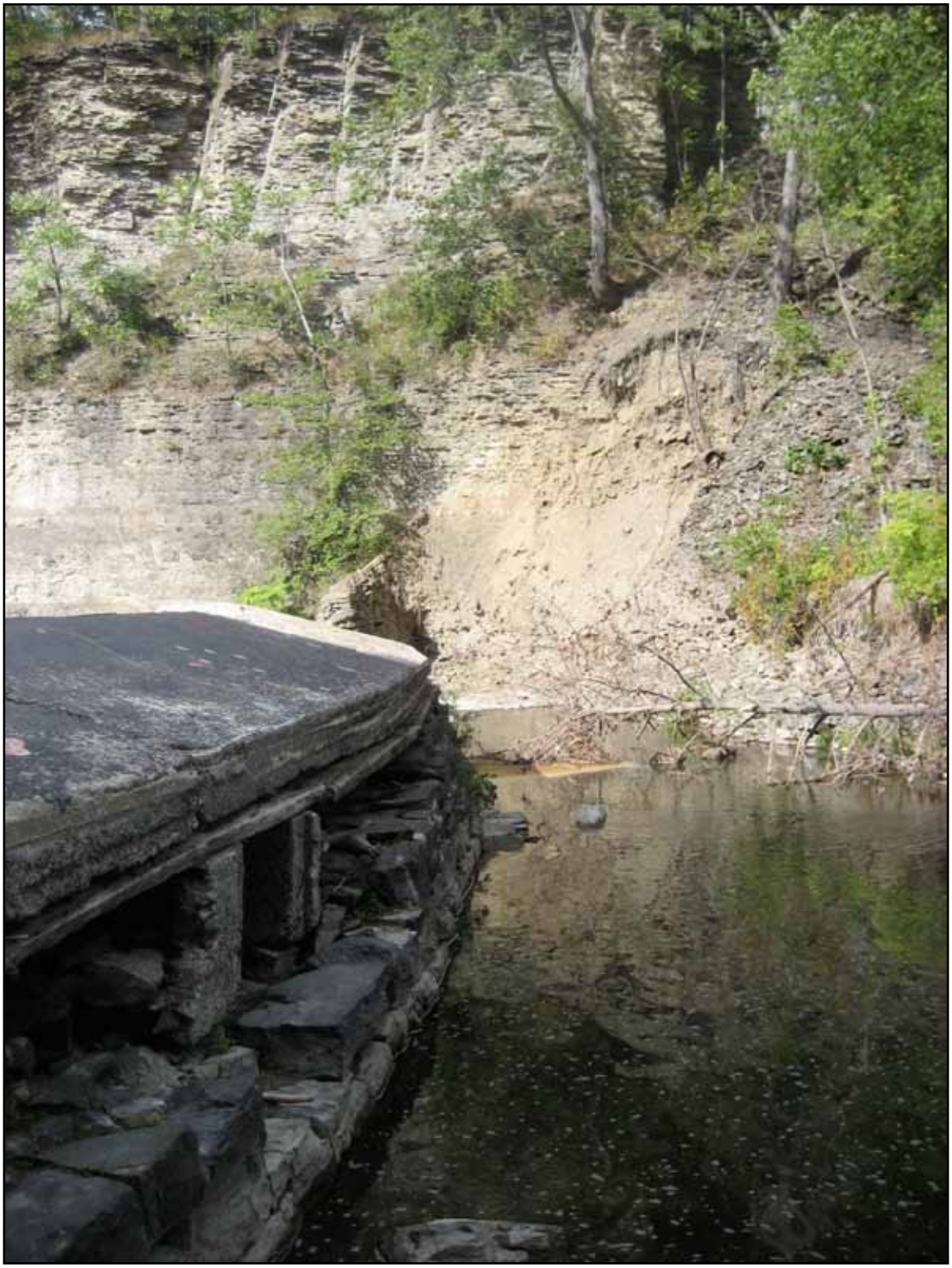

Fig. 99. Upstream side of the dam, where the concrete shell has deteriorated, showing the crumbling stone foundation and the opening of the spillway. (Photograph by author).

Fig. 100. The sluice gate at the head of the tunnel used to control the flow of water under it and into the raceway. Slag and debris have built up along its base and obscures the wooden gate, which is only partially visible. The staircase leads from the gate to the top of the dam. (Photograph by author).

Fig. 101. The hand-operated rack and pinion that lift the gate up and down. (Photograph by author).

Fig. 102. Profile of the tunnel mouth with the back of the sluice control. (Photograph by author).

Fig. 103. Looking west through the tunnel. The concrete supports visible along the southern wall held the wooden platform, of which several beams are still present. (Photograph by author).

Fig. 104. The easterm mouth of the tunnel with supports for the wooden flume. (Photograph by author).

Fig. 105. Looking west down the raceway from the tunnel. At left is the lateral cut in the gorge that historically carried the wooden flume that first supplied the site's mills with water. In the background is the bulkhead that controlled water flow to the rest of the raceway. (Photograph by author).

Fig. 106. Interior of the bulkhead, showing the channel through which the water passes. (Photograph by author).

Fig. 107. Control mechanism at the top of the bulkhead. (Photograph by author).

Fig. 108. Looking east from the bridge crossing the raceway with the bulkhead in the middleground. The leveled area along the southern edge of the raceway was occupied by a flume that supplied the gun factory. (Photograph by author).

Fig. 109. Looking west from the bridge down the raceway. with the Island at right. (Photograph by author).

Fig. 110. Looking east up the raceway. The remains of the stone dam are in the middleground with the bridge in the background. (Photograph by author).

Fig. 111. The base of the raceway's slope, which has been widened since the demolition of the mills that once stood along it. (Photograpph by author).

Fig. 112. The rubble forming the eastern slope up from the raceway is mainly from the ruins of the paper mill. At right is the channel of the raceway that serviced the flour mill. (Photograph by author).

Fig. 113. Looking southeast through the raceway at the point where it makes a forty-five degree turn. (Photograph by author).

Fig. 114. Looking south from the top of the flume to the flour mill. The western side of the raceway is formed by a concrete retaining wall, while the eastern side is cut from the rock at the base of the Island (Photograph by author).

Fig. 115. Looking west along the flume that carried water from the end of the raceway to the Fall Creek Flour Mill, with the building's foundation in the background. (Photograph by author).

Fig. 116. The terminus of the raceway channel. Water was historically diverted to the left and out of the picture to the flour mill, while the rest spilled over the cliff in the center of the picture and reentered Fall Creek. (Photograph by author).

CHAPTER 10.

CONCLUSION

During its century-long tenure in Ithaca, the Gun Company played an instrumental role in the expansion of the town and became a major institution, garnering both national and international recognition for the high quality and ingenuity of its firearms. One of the last remaining of the original industries in Ithaca, the factory was plunged into decay and abandonment following its financial decline. In this state, the site became a toxic nuisance and a blight on the adjacent neighborhoods, falling short of its potential as a post-industrial landscape to raise awareness of the area's significant industrial heritage. The future of this once industrial site lies in high-end residential housing, with an allowance for public parkland, as per the redevelopment proposal put forth by Wally Diehl and Frost Travis. It is in this critical time, nearing the close of the demolition and remediation efforts before the next chapter of the site begins, that a detailed documentation of the site and its enduring historical landscape features becomes even more imperative. In light of the landscape's fragile state, this thesis serves as a collection of information on the site's earliest beginnings to data on its most recent history.

The site's capacity as an asset to the community is compounded by its location along the gorge, overlooking the Ithaca Falls, and its proximity to the natural area, an attraction for tourists and locals alike. Preservation of the Island area as part of the natural area is integral in the successful development of the site. A public easement along the proposed development would provide a promenade to the platform on the Island, previously occupied by the factory's outbuildings, allowing the public admittance to a dramatic overlook of Ithaca Falls previously unobtainable. In considering the strategy for the future of the Island, a built landscape may be less appropriate than a strategy that re-integrates the gun factory parcel with the natural area, restricting visitors and nurturing the relationship of the rehabilitated site with its setting. Much may be lost in the planned

development of the site, but the unique opportunity that the natural area could provide might be enhanced by highlighting its enduring historical features, thereby revealing a piece of the site's legacy. The raceway and tunnel in particular stands as a testament to the enterprising spirit and ingenuity of Cornell University's founder and is an exceptional feature unlike any other in the region, or even the country, making it worthy of considering for nomination to the National Register of Historic Places.

While this thesis serves as a compilation of past works conducted on the Ithaca Gun Company site, much is left unknown and requires additional recording of the site. Indeed, some of the challenges in conducting research for this thesis related to incomplete, or outdated surveys and base maps and incompatible sources. A complete survey that includes a detailed mapping of the site's intricate topography would be an invaluable resource not only for a static reference of the site, but for future studies and design proposals. Further information on the early land use and details of the raceway and flumes supplying the mills might benefit from archaeological investigations where surface documentation doesn't suffice. Where this work relies predominantly on recent and historical records, formal interviews could have been conducted that might have furthered the dialogue on the conditions that brought the site to its current state. A more systematic inclusion of discussions and site visits may well have rounded out the documentation and narrative of this study.

This thesis focuses on the past and present history of the Ithaca Gun Company site rather than offering design suggestions or strategies for negotiating its imminent redevelopment. The intention of this work, then, was to consolidate the pertinent materials and present its extant condition in order to facilitate future endeavors on the site. In addition, it strives to underscore in every respect the utter importance of a thorough examination of the landscape's features in formulating a complete chronicle. Above all, every effort should be made to document and consolidate the remaining

structures on the site given the recent demolition of the majority of the Gun Company buildings before they are lost to the community forever.

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