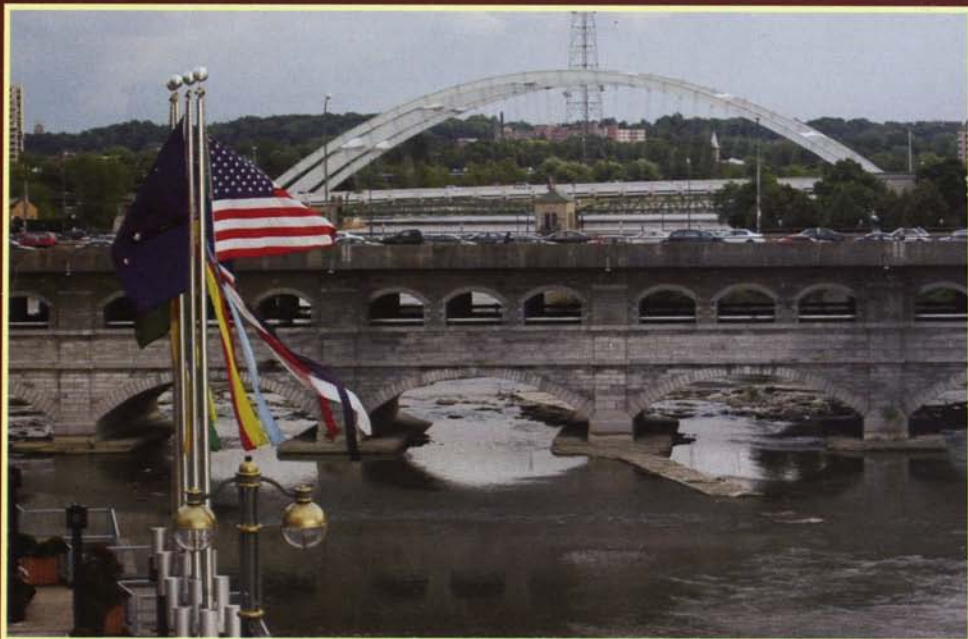


# ROCHESTER HISTORY

## The Erie Canal and Rochester: Past, Present, and Future

*By Thomas X. Grasso*



*World Canals Conference 2010  
Commemorative Edition*

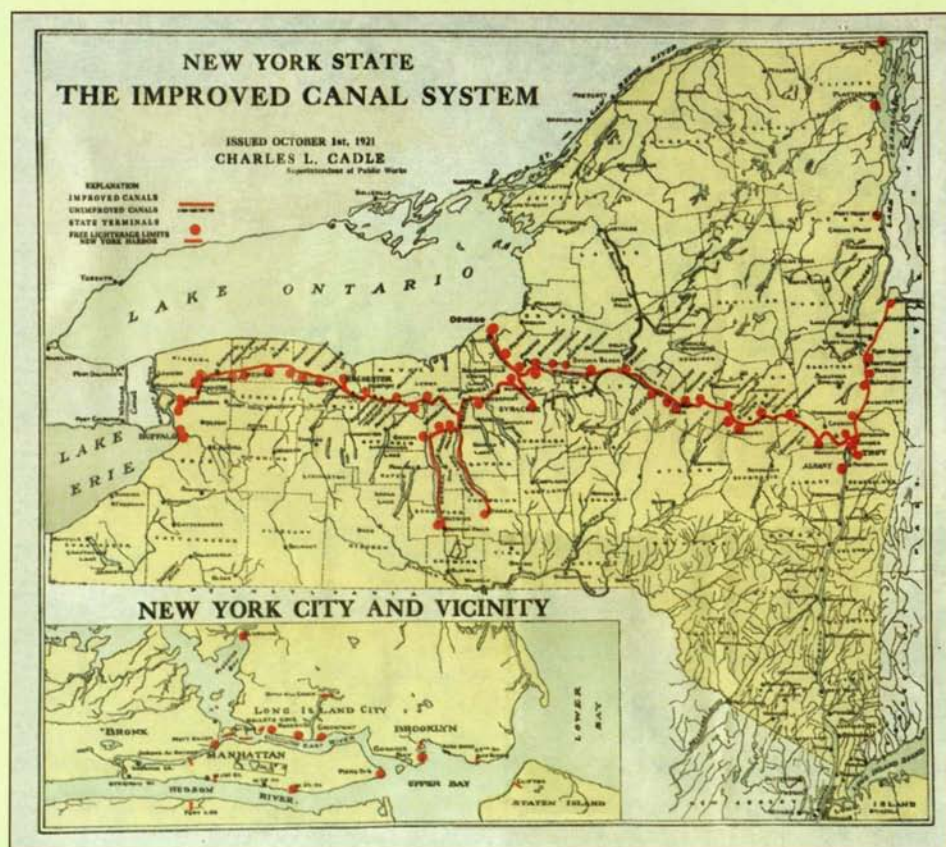
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*The New York State Barge Canal, c. 1921. The circles represent sites of terminals and freight houses. From The Canal Society of New York State, 1995.*

*Cover: A modern-day view of the Erie Canal aqueduct, now the Broad Street Bridge, looking south. In the background is the Frederick Douglass-Susan B. Anthony Memorial Bridge. Photograph by Ira Srole. From the collection of the Rochester City Hall Photo Lab.*



# ROCHESTER HISTORY

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Dear *Rochester History* Reader,

The Erie Canal has long been recognized not only as the engineering marvel of its time but also as the vehicle that drove the development of western New York. The canal opened up unprecedented opportunity for trade and travel, resulting in the creation of a boomtown atmosphere in Rochester and beyond. Signs of the early canal are visible throughout Rochester and Monroe County, including remnants of locks along route 490 and the aqueduct beneath the Broad Street bridge. The canal is never far from the minds and lives of Rochesterians. The Rochester Public Library shares a unique bond with the Erie Canal; the Rundel Memorial Building sits atop the original route of the canal over the Genesee River. The latest issue of *Rochester History* records anew the history and importance of the grand Erie but also tempers that with an even grander vision for the future. As the Erie moves into its third century, the ingenuity that drove the first turning of earth for Clinton's Ditch is revived and promises new direction born out of past glory.

Patricia Uttaro, *Library Director*

## About *Rochester History*

*Rochester History* is a scholarly journal that provides informative and entertaining articles about the history and culture of Rochester, Monroe County, and the Genesee Valley.

In January 1939, Assistant City Historian Blake McKelvey published the first quarterly edition of *Rochester History*. Subjects researched and written by him and other scholars were edited, published, and distributed by McKelvey with the goal of expanding the knowledge of local history. Studying local history as a microcosm of U.S. history has brought insight and understanding to scholars and researchers around the globe.

Today *Rochester History* is published biannually (spring and fall) by the Central Library of Rochester and Monroe County, with the exception of 2009 and 2010, when three issues will be published in order to make up issues not published earlier. The journal is funded in part by the Frances Kenyon Publication Fund, established in memory of Ms. Kenyon's sister, Florence Taber Kenyon, and her friend Thelma Jeffries.

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# The Erie Canal and Rochester: Past, Present, and Future

*By Thomas X. Grasso*

On September 19, 2010, nearly 400 canal experts and enthusiasts from 17 countries are expected to converge on Rochester for the World Canals Conference. The city was chosen as the international conference host for several reasons. The original Erie Canal passed directly through the center of the city and was largely responsible for Rochester's growth from little more than a backwoods trading post to America's first "boom town" in a matter of only a few decades in the early nineteenth century. Many original canal structures, such as stone walls, locks, bridges, and most strikingly, a stone aqueduct, are still visible on city and suburban landscapes, as are numerous canal-era buildings. And although the New York State Barge Canal, which replaced the Erie in the early twentieth century, bypasses the city center, it flows through many nearby historic towns and villages and comes very close to downtown. The accessibility of such a historic and navigable waterway has spurred many new canalside developments over the past decade, including housing and retail complexes, excursion boats, and the Erie Canalway Trail.

But perhaps the most compelling reason for Rochester's selection as conference host is a bold new plan to restore the historic Erie Canal to the city's landscape. In 2000, when Rochester first hosted the World Canals Conference, delegates from five countries gathered in the aqueduct below the Broad Street Bridge to discuss ways of adaptively reusing the historic structure. Many ideas



*A tour group gathers beneath the Broad Street Bridge in the old Erie Canal Aqueduct in 1990. From the collection of the Rochester City Hall Photo Lab.*

were put forth by experts and enthusiasts alike, but not one suggested converting the former aqueduct—abandoned by the canal system in 1920, used for a while as a subway bed, and now capped by a road—back into an aqueduct. Yet four years later, in June 2004, that's exactly what Inland Waterways International and the Canal Society of New York State proposed. They envision re-watering the old Erie Canal through downtown, making the city's restored 1842 aqueduct a centerpiece of economic revitalization. The concept is not as pie-in-the-sky as it may seem to some. Research has shown that when waterways are introduced into urban centers, either as restorations of long-vanished canals or rejuvenations of existing—though



*Brindleyplace in Birmingham, England, is the site of a vibrant canalside business and recreational area, 2005.  
Photo provided by Thomas X. Grasso.*

perhaps derelict and decrepit—ones, they transform city centers, increasing the value of nearby buildings by as much as 50 percent, creating new jobs, and spurring private investment.<sup>1</sup> Therefore, the City of Rochester has embraced the idea. Design and engineering firms hired by the City have confirmed the proposal's feasibility and developed a master plan to guide future development, although actual

implementation remains uncertain. The vision for the future is reminiscent of the past—a vision in which the Erie Canal once again makes Rochester an all-American “boom town.”

## Clinton's Ditch

The Erie Canal was not the first canal in North America or even New York State, nor was it the last, but it was by far the most successful. In 1850, at the pinnacle of the American canal era, the Erie was one of approximately 28 man-made waterways in operation east of the Mississippi River. Today, it is the only one still in existence, although in a much altered form. The state's first canals were built by the Western Inland Lock Navigation Company. The company was incorporated in 1792 to improve navigation from the Hudson River to Seneca Lake and Lake Ontario. As part of this mission, the company constructed three short canals in the Mohawk Valley—Little Falls Canal (1796), Rome Canal (1797), and German Flats Canal (1798)—to bypass rapids, falls, and other navigation obstacles. The company eventually failed, and New York State purchased its rights in 1820.

Skepticism was, therefore, in no short supply when proposals were advanced to build a canal across nearly the entire state, uniting Lake Erie with the Hudson River and New York City. Enemies of the gargantuan Erie Canal project argued that if short canals built in relatively civilized areas could not be operated successfully, a canal 363 miles long, built mostly through wilderness, was sure to fail. Ultimately, the visionaries prevailed, in part due to the persistence of Governor DeWitt Clinton, who at various points in time has been both chastised and lauded for his role in bringing the canal to fruition. Clinton was a comparative late-comer to the epic struggle.<sup>2</sup> Earlier efforts by notables such as Elkanah Watson, Gouverneur Morris, and Jesse Hawley had already generated interest in both the public and government realms.

The state legislature established the first Canal Commission on March 15, 1810.



Clinton, then a state senator, was named as a commissioner. His support for the project stemmed from his participation that summer in a tour along the proposed route led by James Geddes, who had completed the first thorough survey for the canal just two years earlier. Clinton's 1810 journal provides a superb description of the state's people, towns, and geography at the time.<sup>3</sup> It would take another seven years of struggle and debate for the canal project to get off the ground. On April 15, 1817, the state legislature passed a bill authorizing construction of the Erie Canal, despite the opposition of downstate representatives.<sup>4</sup>

Groundbreaking ceremonies took place on July 4, 1817, in Rome, New York, and digging began in earnest to the east and west. By 1822, the canal had reached the east side of the Genesee River in Rochester to the west and Schenectady to the east. The following year, the canal was completed from Brockport to Albany, and the Champlain Canal fully opened, creating a link between the Erie Canal in Cohoes north to Lake Champlain at Whitehall. Finally, Nathan Roberts conquered the last hurdle, vaulting the canal over the Niagara Escarpment at Lockport with his twin set of five combined (staircase) locks, and the work was done. The canal was opened to Lake Erie at Buffalo in October 1825. On the 26<sup>th</sup> of that month, when the state's new governor, DeWitt Clinton, boarded the *Seneca Chief* at Commercial Slip in Buffalo for an inaugural voyage to New York City, the ditch that bore his name was already on its way to greatness.

Clinton's Ditch was 363 miles long, 40 feet wide at water surface, and four feet deep. It had 83 stone lift locks between Albany and Buffalo, each 95 feet long and 15 feet wide—92 percent of them single-chambered structures like those used in today's canal. Utica, Syracuse, Rochester, and Buffalo all mushroomed in the years following the canal's completion. The economic spark was due to the fact that canal boats could carry 70 tons apiece, slashing the cost of shipping a ton of goods from Buffalo to New York City by more than 90 percent, from \$100 per ton to \$7.



*A view of one of the twinned sets of five locks on the Erie Canal at Lockport. They were originally constructed from 1823 to 1825 and enlarged between 1836 and 1849. Five locks were needed instead of the usual single lock because of the village's location at the top of the Niagara Escarpment. These locks enabled boats to ascend and descend 50 feet as they traveled through the canal. From the collection of the Rochester Public Library Local History Division.*

# The Young Lion of the West

It is difficult to imagine that in 1810, when DeWitt Clinton and the rest of the canal commissioners came to Rochester on their exploratory trip, there wasn't a single person living



*The waterwheel from the Triphammer Mill was rediscovered during excavations at the site in 1983 and restored in 1993. The mill, built circa 1816 on Brown's Race, originally housed William Cobb's Sythe and Tool Factory, and changed hands several times before being destroyed by fire in 1977. The wheel, measuring 25 feet in diameter, sits in a manmade pit within the mill's ruins, 34 feet below street level. From the collection of the Rochester City Hall Photo Lab.*

in what would become downtown Rochester. The first permanent settler didn't arrive until 1812, and when the Village of Rochesterville was incorporated in 1817, the same year the legislature authorized canal construction, it had just 1,000 inhabitants. The Erie

Canal's course through downtown had an impact that was immediate and transformational. From virtually nothing sprang a great city.

Soon the city itself took on the name of the canal boat that joined Clinton's inaugural voyage when he arrived in Rochester, the *Young Lion of the West*. It seemed apt given the explosive economic expansion and physical growth that the canal fostered. The struggling enclave that only a few years earlier had established itself at the original Upper Falls of the Genesee (between present-day Broad and Main streets) was transformed into a thriving, vibrant community.<sup>5</sup> The rapid growth is revealed in the population, which in 1822 was 3,310—twice that of only two years before and triple that of 1817.<sup>6</sup> Further affirmation is found in the 1827 village directory, which boasted that “*not one adult person is a native of the village!*” The oldest person now living in the village, who was born here, *is not yet seventeen years of age!*”<sup>7</sup>

Clinton, recalling his 1810 visit in a letter to Everard Peck in 1827, expressed astonishment at the village's success:

When I first saw your place here in 1810 without a house who would have thought that in 1826 it would be the source of such a work? This is the most striking illustration that can be furnished of the extraordinary progress of your region in the career of prosperity.<sup>8</sup>

Not everyone shared the Governor's eloquent assessment. In 1826, Amos Eaton, the “Father of New York Geology” and founder of Rensselaer Polytechnic Institute in Troy, led a geological expedition across the state aboard the canal boat *LaFayette*. Another traveler, Asa Fitch, the future state entomologist, recorded Eaton's impressions of Rochester:



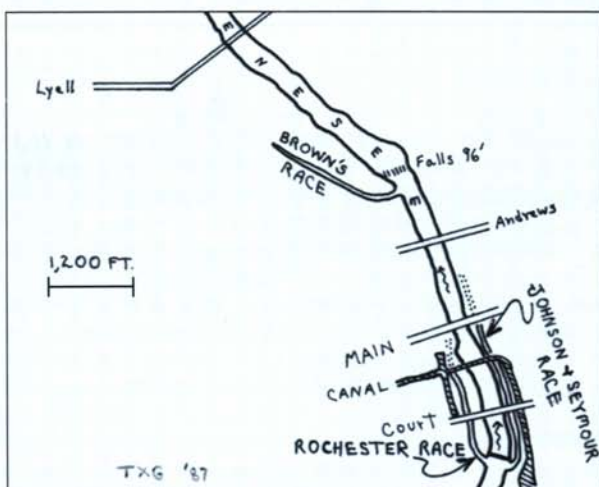
This place Prof. Eaton says is a mere mushroom springing up in a moment and is destined to decay and fall away to nothing. He predicts that there will not be a third of the present number of buildings in the lapse of a few years; that he does not believe there is a place on earth so remarkable for its splendor and poverty.<sup>9</sup>

Rochester's founding and subsequent growth was the product of the fantastic intersection of two very different water courses, both holding the promise of a successful future but in two different ways—the Erie Canal, an artificial river that provided an inexpensive means of transporting raw material and finished goods, and the natural Genesee River, with its waterfalls, cascades, and rock-faced gorge, sculpted by the muddy waters' headlong dash north to Lake Ontario. The water power, derived from the river's drop, churned water-wheels that in turn drove shafts, gears, and leather belts that created smokeless industrial power. A spectrum of products for domestic, agricultural, and industrial use, such as flour, furniture, edge tools, farm machinery, beer, barrels, canal boats, and fire engines were turned out by Rochester's many water-powered mills. (It has been said that Queen Victoria praised Rochester flour because it made the best cakes!)

## The Flour City

As workers began digging the Erie Canal, Rochester had three mill races at various stages of construction along the Genesee. The Rochester, Fitzhugh, and Carroll Race (hereafter referred to as the Rochester Race) on the west bank in the city's center, was completed before 1817. It ran beneath what is now the Blue Cross Arena at the War Memorial and the Thomson Reuters complex north to Main Street.

On the east bank, opposite the Rochester Race, was the Johnson and Seymour Race. On July 4, 1817, while groundbreaking ceremonies for the Erie Canal were taking place in Rome, Elisha Johnson and Orson Seymour began blasting their mill race under the present-day Rochester Public Library Rundel Memorial Building, Rochester Riverside Convention Center, Radisson Hotel, and Water Street north to High Falls. Johnson also constructed a dam just above the old Upper Falls to secure

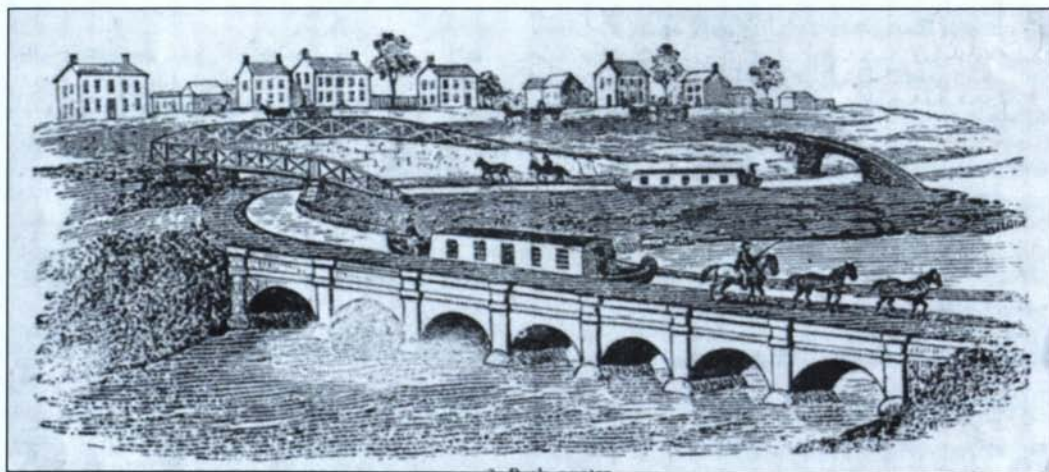


*These three mill races in downtown Rochester provided the power that made Rochester an economic "boom town." From the Canal Society of New York State.*

a sufficient supply of water for his and the Rochester Race. Brown's Race was farther north, near High Falls.<sup>10</sup> These three races channeled river water into narrow streams that ran north roughly level with and parallel to the surface of the river above the falls and then poured over and turned large-diameter water-wheels, providing power for the city's mills, before plunging back to the river below the falls in cuts called tail races. The industrial sites along these races dominated the flour and industrial output of the city, in large part due to their proximity to the Erie Canal, and provided the economic underpinning of the city's rapid growth.

William Atkinson began building his Yellow Mill, the first on the Johnson and Seymour Race, near the Main Street Bridge in 1817, and Hervey Ely, whose mill was originally located on the Rochester Race on the west river bank, relocated to the east side in 1822 after a flood destroyed the original mill. The foundation of his later 1827 mill still exists under Rochester Gas & Electric's Water Street Substation, south of the Convention Center. On October 29, 1822, Atkinson and Ely made the first shipment of Rochester flour via the Erie Canal east to Little Falls. The Flour City was born.

After the first aqueduct was completed across the Genesee River in 1823, new mills flourished along the three races, and the population continued to swell, reaching 12,252 by 1834, when the former village received its city charter. In the first 10 days of the 1823 canal season, 10,450 barrels of flour were shipped eastward aboard 58 boats. Forty-five boats arrived, unloading, among other things, 4,000 gallons of beer and 2,300 gallons of whiskey at Gilbert's Basin alone (behind the "Old Stone Warehouse" at the corner of Mt. Hope and South avenues). Apparently, the rapid growth and industrial boom of the early years fueled a commensurate, nearly unquenchable thirst for adult beverages!



*A plan of the first Erie Canal Aqueduct, drawn by Everard Peck before its completion, and showing only seven of the eleven arches. Rochester Historical Society Publication Fund Series Vol. 11. From the collection of the Rochester Public Library Local History Division.*

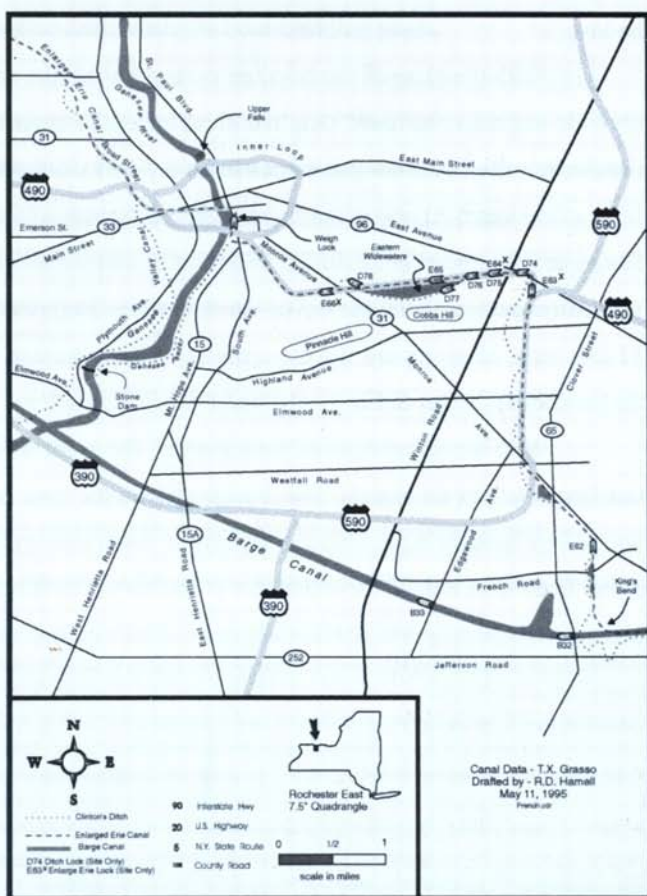


# Glacial Moraines and the Erie Canal's Route through Rochester

While the landscape made Rochester ideally suited as a mill town, nature also played a role in determining the route the Erie Canal would take into the soon-to-be booming community. To modern eyes, the Erie Canal's L-shaped path from Pittsford to Rochester seems roundabout. Wouldn't a direct route along what is today Monroe Avenue have been more efficient? As it turns out, the answer is no. The canal's engineers took the long way around because of an obstacle so daunting it was better to avoid it than to try to slice through—the Pinnacle Range. Located at the south edge of the city, the Pinnacle Range is a linear series of hills and knobs

approximately four miles long. It extends from the Genesee River at the University of Rochester east to just beyond Winton Road in Brighton. Mount Hope Cemetery, Highland Park, Pinnacle Hill, and Cobbs Hill are the main features. Pinnacle Hill, at 750 feet above sea level, is the highest peak in the range and rises 230 feet above the plain below.

The Pinnacle Range is part of a glacial feature, called the Albion-Rochester Moraine, that was deposited nearly 12,000 years ago, and is the best example of a moraine north of the southern end of the Finger Lakes. It formed when the melting edge of the glacier, retreating north from the Finger Lakes, paused for a short time along what is now the north slope of the range when the rate of the thaw slowed to a rate nearly equal that of the glacier's internal flow south. The result was that the rock debris, sand, and gravel in the ice was transported to its

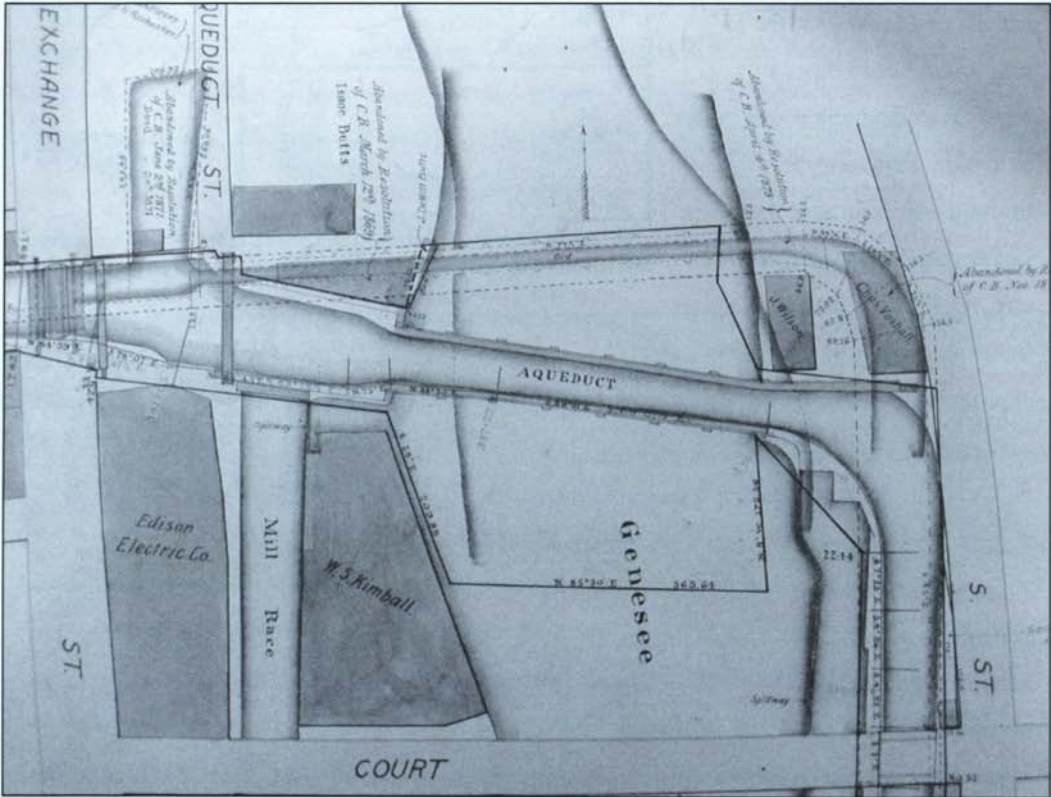


*As the canal system expanded over time, its path changed. This map shows the three routes through Rochester at various points in time. From The Canal Society of New York State, 1995.*

margin and dumped, creating a series of irregular hills. Excavating through the ridge would have been immensely expensive. Going over the top wasn't an option either; locking up the north side of the range would have meant that the Lake Erie water that filled the canal would be lost.

With the route of the canal determined by nature east of the Genesee River, the next obstacle was the river itself. Original plans called for crossing it on a slack-water pool at grade (similar to today's crossing in Genesee Valley Park), but that idea was abandoned early in favor of an aqueduct above the flood levels of the mighty Genesee. Construction of the city's first aqueduct started in the fall of 1821; it was completed in 1823. Built of red Medina Sandstone quarried from the top of the Rochester Gorge north of Ridge Road, it had a trough 17 feet wide, allowing one boat to cross above the Genesee. It touched the east bank between the present-day Convention Center and RG&E Substation.

With the completion of the aqueduct, the canal was opened to Brockport, and the west side began to flex its muscle. Two basins west of the river between the aqueduct and Exchange Street were quickly built: Child's Slip on the south side and the larger Child's Basin on the north. Both were named for Rochester's first mayor Jonathan Child, whose basin-based



Schillner map of the original and enlarged Rochester aqueducts, c.1896. From the New York State Archives.

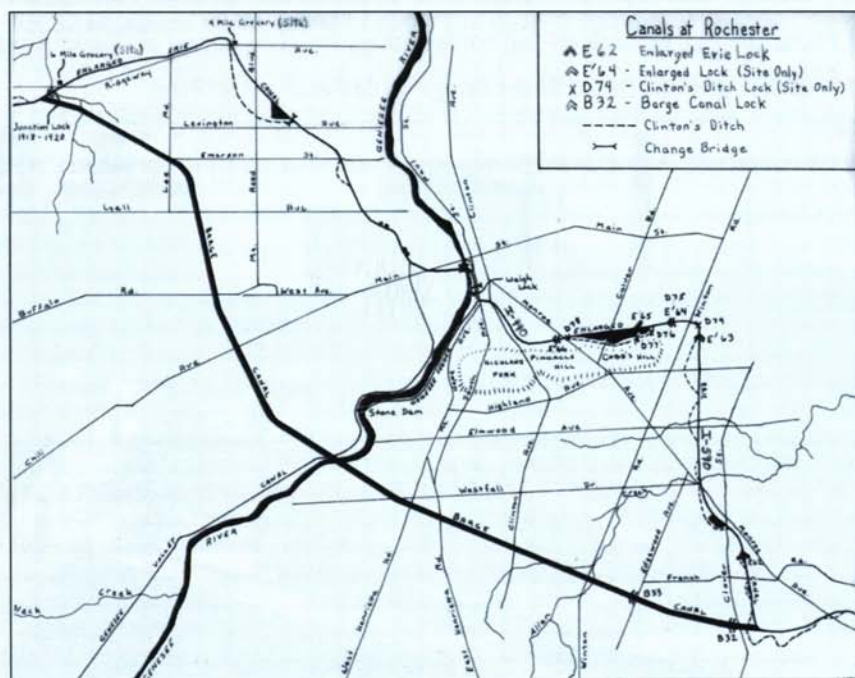


enterprises made him wealthy. Child's Basin became the most active one in Rochester. Packet boats discharged passengers while others boarded, and freight boats docked to offload materials or take on cargo from nearby mills. Soon there were a number of basins scattered throughout Rochester, many of them also functioning as boat-building yards.

Soon the traffic in the center-city harbor was so heavy that village leaders adopted strict rules for boat traffic. The narrow aqueduct that permitted only one-way passage exacerbated the problem. On September 22, 1829, two boat crews got into a debate over which of them had the right-of-way across the aqueduct. Neither crew would flag, and the debate predictably escalated to an all-out brawl. So many Rochesterians crowded onto the Exchange Street Bridge to view the pugilists that the bridge collapsed, depositing the 50 onlookers into the canal.<sup>14</sup>

## Enlarging the Erie Canal

By 1835, Clinton's Ditch was choked with thousands of craft carrying people and products not only through Rochester, but across the state. The size of the canal's prism and its narrow one-way locks and aqueducts were constraints that could no longer be tolerated. But a factor perhaps more significant than the storied waterway's physical size in determining its future was the magnitude of New York State's Treasury. The canal's founders and builders had



*This map shows the paths of the three canal routes through eastern Monroe County and the City of Rochester. The dashed line represents Clinton's Ditch, the thin solid line shows the enlarged Erie Canal, and the wide solid line shows the Barge Canal. From The Canal Society of New York, 1995.*

optimistically predicted that they could pay back canal debts within 40 to 50 years. But only 10 years after it opened, the canal had already paid for itself and its maintenance with tolls generated by the thousands of boats that plied its waters. Profits were so large they offset the state budget by two-thirds. With coffers overflowing, a bigger and better canal was on the way.

In 1836, the state launched a new initiative to nearly double the width and depth of the original Erie Canal from 40 feet by 4 feet to 70 feet by 7 feet. To accomplish this, locks had to be relocated, lengthened, and widened, and also twinned so that two boats could lock up and down simultaneously. Existing aqueducts had to be rebuilt and additional ones constructed, all built to a higher standard that permitted two-way traffic. These changes ultimately led to the creation of a new class of boat capable of hauling 240 tons apiece, lowering transportation costs once again

The route of the enlarged Erie closely paralleled that of the original Clinton's Ditch and, in fact, was built on top of it in many places. But the numerous curves of the original were eliminated, and in some locations the route was completely new. When the enlargement was deemed complete in 1862, the canal was 350 miles long—13 miles shorter than the original—and had 72 twinned locks between Albany and Buffalo.<sup>15</sup> While traces of Clinton's original ditch are rare, structures from the 1836-1862 enlarged Erie Canal are relatively common. Rochester-area examples include Lock 62 behind the Applebee's Restaurant in Pittsford Plaza, one wall of Lock 66 that borders Interstate 490 just east of Culver Road, and the 1842 aqueduct, now the Broad Street Bridge, in downtown Rochester.



*Traffic on the Rochester aqueduct looking west, c. 1900.  
From the collection of the Rochester City Hall Photo Lab.*



# A New Rochester Aqueduct

The original Rochester aqueduct began to crumble and leak badly not many years after its completion in 1823. Therefore, when the first canal enlargement began in 1836 a new aqueduct at Rochester was a priority. It would be constructed just south of the old aqueduct and on a slightly different alignment, eliminating the tight hairpin turn that was at the east end of



*A view of the enlarged Rochester aqueduct looking west with its all-stone trunk, or trough, visible, c. 1900. From the New York State Archives.*

the old structure. Josiah Bissell began building the Enlarged Rochester Aqueduct in 1837; it was completed in 1842. Some of the red sandstone blocks of the first aqueduct were removed and repurposed in Bissell's home at 630 East Avenue, now the Upton Court building of the Rochester Methodist Home. The new 10-span structure was constructed of durable Onondaga Limestone quarried at Union Springs, New York. It was 800 feet long with an interior water width of 43 feet and because of the 18-foot wide locks, provided ample room for passage of two 17½-foot wide boats.

Of 32 aqueducts on the enlarged canal, Rochester's was one of only two constructed entirely of stone. The other one was over Oak Orchard Creek in Medina. All the other aqueducts had stone piers, but the trunks (where the water was carried) were constructed of wood; stone arches supported the towpath on one side of the structure. The reason for the added expense of a stone aqueduct in Rochester wasn't aesthetic; floods ravaged downtown fairly routinely before the Mt. Morris Dam was constructed in the early 1950s, and a conventional wooden aqueduct would have been carried away. The 1842 aqueduct still strides proudly across the Genesee River, supporting the Broad Street Bridge that was built in 1924-25 and rebuilt in 1973-74. The aqueduct functioned as part of Rochester's subway system from approximately 1927 to 1956.



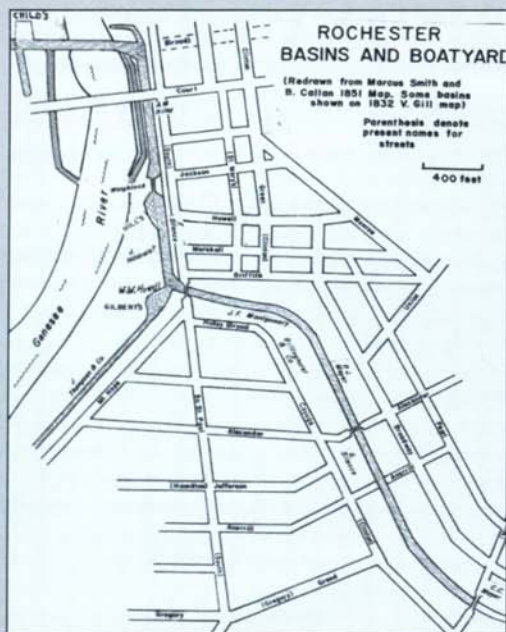
*The Rochester aqueduct during the flood of 1913. Note the level of the river obscuring the arches. From the New York State Archives.*

## Rochester: The Canal Boat City

Flour wasn't the only product for which early Rochester was famous. The city's ready access to lumber attracted woodworking craftsmen, which in turn led to the city's prominence as a boat-building center. By 1834-35, when the first maps of the Erie Canal were published by Holms Hutchinson, there were 10 substantial canal basins in Rochester, six of them serving as boatyards by the end of the decade. Among the most prominent was that of Seth C. Jones, the "Dean of Rochester Boat Builders," who worked out of Warehouse Basin from 1827 to 1848. The late City Historian Blake McKelvey described one of Jones' vessels, the "Superior," built in 1829, as "the finest in the early years.... Equipped with washrooms and a bar, the cabin ornamented with scenic paintings by Daniel Steele, this palatial boat set a new standard for traveling comfort and elegance."<sup>1</sup> Other early boat builders included Joel P. Milliner, Walter Barhydt, Lars Larson, Jeremiah Hildreth, and William W. Howell. Howell built the *Triumph*, which gained notoriety because it was built without the stimulus of ardent spirits.

Boat building got a short-lived boost from the enlargement of the canal, begun in 1836. By the late 1840s, 11 boatyards launched 210 vessels. By 1852, the city boasted 14 yards, and in 1855, the industry employed 261 men. Boat-building began to

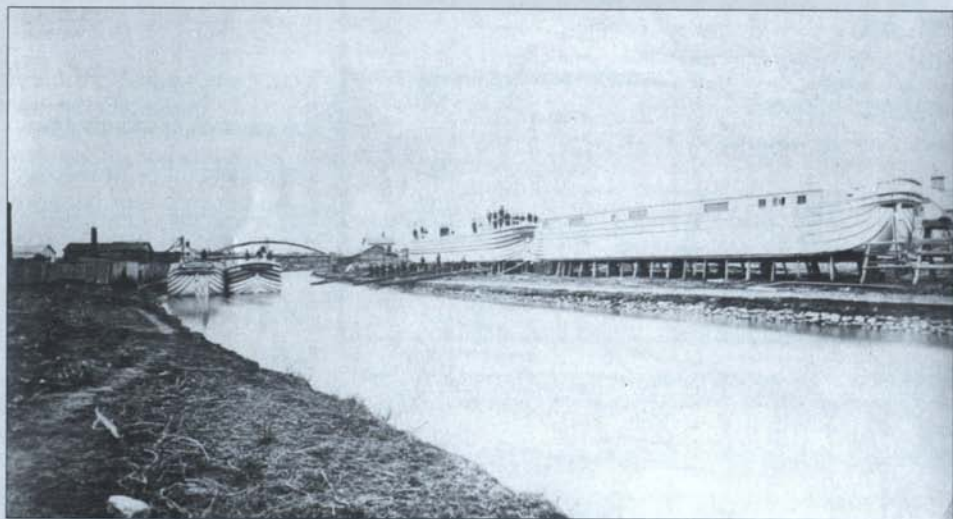
decline around the Civil War, however, as Buffalo came of age and began out-producing Rochester. By 1863, only nine boatyards were in operation in Rochester. By 1880, only five remained. Yet these yards continued to turn out high-quality products. With scows valued at \$2,600 and "lakers" (grain boats that could be towed in fleets across lakes and large bodies of water) at \$4,200, the total value of canal boats produced in Rochester was greater than that of any other city in the country.<sup>2</sup>



Mid-nineteenth-century canal basins and boatyards.  
From *The Canal Society of New York State*, 1995.



The last of the famous Rochester boat builders were the Meyers. Andrew Meyer and his wife Frederica emigrated from Baden, Germany, arriving in Rochester by canal boat in 1836. He began building boats shortly thereafter. Meyer and his eldest son, Phillip, operated a boatyard in the 1860s and early 1870s at the old Milliner site north of Smith Street. Andrew died in 1861, and eventually P.J. Meyer established his own yard on the north side of the canal west of the Alexander Street Bridge. His brother Charles C. Meyer owned a yard just down the line on the same side of the canal east of the Meigs Street Bridge. Together, they built the largest class of canal boats in existence at the time, 98 feet long and 17.5 feet wide, primarily for carrying grain. When P.J. Meyer died in 1890, his boatyard ceased operations. C.C. Meyer and Son continued building boats at a yard at the eastern widewaters just west of Culver Road—where the Armory stands today—until at least 1900. Charles Meyer died on April 7, 1918, one month before the Barge Canal opened. His death marked the end of a long chapter in Rochester's industrial history.



*C.C. Meyer & Son's boatyard, c. 1880-1892. Several boats are shown under construction along the canal.  
From the collection of the Rochester Public Library Local History Division.*

1. Blake McKelvey, "Rochester and the Erie Canal," *Rochester History* 11, nos. 3 and 4 (1949), 10.
2. *Ibid.*, 2.

# The Canal Grows Again

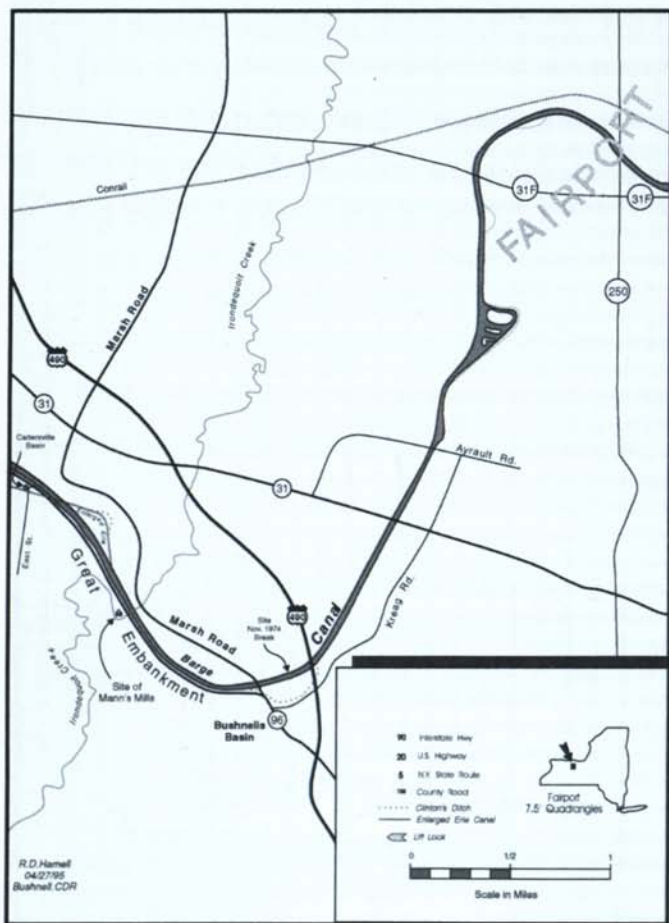
A second enlargement of the Erie Canal began in 1895. This time, the intent was to deepen the Erie from 7 feet to 9 feet, thereby further increasing the carrying capacity of vessels. The plan was ill-conceived from the beginning. The legislature, although warned by

the engineers that the work would cost upwards of \$16 million, appropriated only \$9 million. By 1898 the funds were exhausted and work was suspended. The project was only 40 percent complete. Newly elected Governor Theodore Roosevelt decided to take a reasoned approach to the situation and on March 8, 1899, appointed a Committee on Canals. Its charge was to make a thorough study of New York State's canals, including the question of whether the system should be abandoned. The report the committee submitted to the governor on January 15, 1900,

recommended not only retaining the canal system but

vastly enlarging it to restore the primacy of New York State's commercial interests.<sup>16</sup>

Roosevelt took the recommendations to heart and called for another enlargement of the canal. If the first Erie Canal was Clinton's Ditch, the fourth one was Teddy Roosevelt's. He wrote in 1900: "We cannot rest idle while our commerce is taken away from us, and we must act in the broadest and most liberal and most energetic spirit if we wish to retain the State's commercial supremacy."<sup>17</sup> The legislature agreed, and on April 12, 1900, Roosevelt signed an act directing State Engineer and Surveyor Edward A. Bond to make all necessary surveys and estimates for constructing a Barge Canal System on a scale so grand it would



Map of the three variations of the canal system from Fairport to the Great Embankment. From The Canal Society of New York State, 1995.



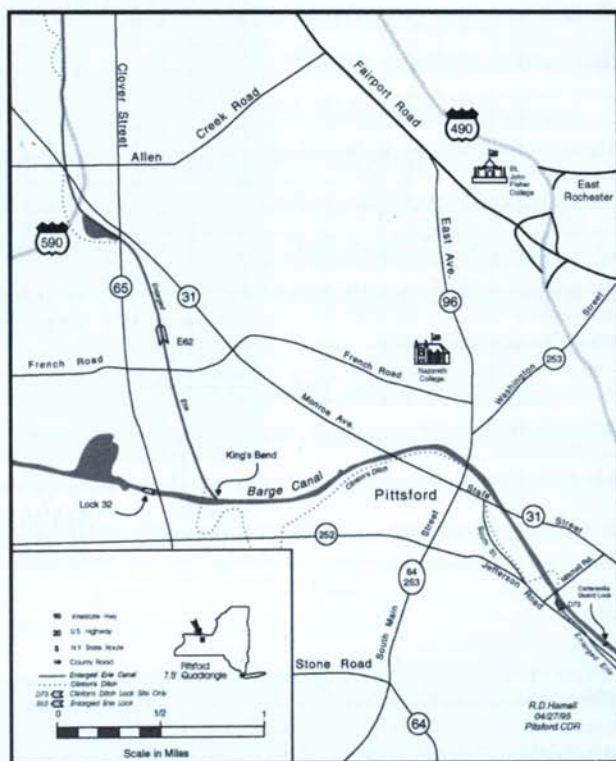
eclipse its nineteenth-century ancestors. The new canal system would be able to accommodate boats 10 times larger than its predecessor; whereas the largest boats the Enlarged Erie could handle were 240 tons, the Barge Canal could accommodate up to 2,500-ton vessels.<sup>18</sup>

On November 3, 1903, New York voters approved “an act making provision for issuing bonds...not to exceed one hundred and one million dollars for the improvement to the Erie canal, Oswego canal and the Champlain canal.”<sup>19</sup> Of the 1,100,708 votes cast, three-quarters were in favor of the project. Most of that majority came from Buffalo and, ironically, New York City. The very city that had opposed the canal in 1817 was largely responsible for its continued existence. What a difference a century makes! Virtually every other county along the canal system, including Monroe County, voted the measure down.<sup>20</sup>

## The Barge Canal System

Thus, as the nineteenth century gave way to the twentieth, the old canal gave way to a new, larger version. Theodore Roosevelt’s 1918 “ditch” dramatically altered the landscape—natural, social, and economic. It was wide enough and deep enough—12 feet—to allow the new barges to haul 2,500 tons apiece—the equivalent of a trainload of grain, and new locks had a useable inside dimension of 300 feet by 45 feet—large enough to accommodate six old Erie Canal boats with room to spare. The new canal was a different species, unlike its ancestors in more than mere size. The Barge Canal

was a modern canal so completely dissimilar in fundamental form, function, route, and method of transporting cargo that it bore little resemblance to the original nineteenth-century canals. Gone were animal-powered boats and towpaths; they were replaced by tug boats and



Map showing the location of Locks 32 and 33 and King's Bend in present-day Pittsford. From *The Canal Society of New York State*, 1995.

motorships. Gone were all the men who pushed and pulled on lock gates to open and close them and who tripped levers that operated valves for filling and draining the locks; electric motors now did that work with the help of just one man. Stone locks were replaced by concrete ones, and 70 percent of the length of the old channel was abandoned because dams converted natural rivers and lakes into canals. The new route bypassed many community centers, including Rochester's, leaving an unsightly, forlorn trench. In many cities and villages, leaders decided to fill in abandoned sections of the old canal, often turning them into roadways. As we shall see, Rochester had loftier plans.

The engineers in charge of the new canal knew they were creating something unlike anything that came before—it was different in every respect, except, of course, that it would link Lake Erie and the Hudson River. Acknowledging this fact, the modern canal was given a new name. The canal across New York State would no longer be called the Erie; engineers referred to it as the “Barge Canal System consisting of the improved Erie, Cayuga and Seneca, Oswego, and Champlain Canals.” The term Barge Canal eventually crept into common parlance, and the general public eventually all but dropped Erie Canal from its vocabulary—that is, until relatively recently.

Construction on the canal that we have today began unceremoniously on April 24, 1905, at Fort Miller on the Champlain Canal. It was completed when workers dug through to the Genesee River in Rochester's Genesee Valley Park on May 15, 1918. The Barge Canal had many challenges to overcome and prompted the engineers to boast that it would require them to blast more rock, excavate more earth, and pour more concrete than the Panama Canal, which was already underway.

In Western New York, particularly from the eastern edge of Monroe County to the Niagara River at Tonawanda, the present-day canal mostly follows the historic footprint of the old Erie Canal, passing through the very heart of the early canal towns. The exception is downtown Rochester. The Barge Canal took an end run around the city, leaving the city center



*The Great Embankment looking west from the Bushnell's Basin side of the valley before construction of the Barge Canal, July 1908. The curve at the top of the photograph was eliminated when the new embankment was built straight across the valley. From the New York State Archives.*



canal-less in 1920.

In eastern and central Monroe County, construction of the Barge Canal was in many ways of epic proportion. Among the most significant achievements, from east to west, were the Great Embankment, Locks 32 and 33, canalization of the Genesee River, and the long rock cut around the west side of the city. The Great Embankment between Bushnell's Basin and Pittsford was rebuilt on a massive scale during Barge Canal construction. That portion west of Irondequoit Creek was straightened by building a completely new embankment on a different alignment than the nineteenth-century version, which looped north. The new embankment was begun in May 1909 and completed by May 1912, with a new concrete trough in place to hold the water.

The robust achievement at Irondequoit Crossing was short-lived. On September 6, 1912, the entire embankment collapsed over Irondequoit Creek, washing out down to creek



*On September 6, 1912, the newly rebuilt Great Embankment broke over Irondequoit Creek, approximately five months after its completion. Although a band-aid repair was completed within three weeks, full reconstruction didn't occur until 1918. From the New York State Archives.*

level. A temporary repair was made, allowing one-way traffic across the break, and the embankment was rebuilt from the bottom up over the next several years. It was completed again in the spring of 1918. This time it held and has so ever since. A break in November 1974 was well to the east—just past Richardson's Canal House.

Locks 32 (Clover Street) and 33 (Edgewood Avenue) were built on the new line west of King's Bend, where the old canal turned north to old Lock 62 at today's Pittsford Plaza and on to downtown Rochester. Lock 33 marks the east end of the Long Level, a nearly 66-mile stretch without a single lock west to the base of the staircase locks at Lockport. These two locks replaced five Enlarged Erie Canal locks that had performed the same function. Electrical power to operate the gates and valves came from a powerhouse at Lock 33 that produced electricity using generators driven by water that bypassed the lock. It

provided power to both locks and the maintenance facility near Monroe Avenue.<sup>21</sup> The ability for all Barge Canal locks to generate their own power was another of the many innovative characteristics that made today's canal so different from the old Erie Canal.

Engineers compared the mammoth rock cut around the west side of the city to the deep Culebra Cut on the Panama Canal. It required workers to knife through the crest of the Niagara Escarpment, slicing through the very same strata exposed at the lip of High Falls and Niagara Falls.



*The bridge excavator, or "grab machine," at work on the Barge Canal in the rock west of Rochester, 1911. The Buffalo Road Bridge (New York Route 33) is visible in the foreground. From the New York State Archives.*

The deep cut was made by blasting, mucking out the blasted material with large earth excavating machines, and using hand-operated, steam-powered drills and chisels. One of the machines used in "mucking out" the cut was called the Bridge Conveyor, or "Grab Machine." The contraption was quite a sight to see. It had a huge grab bucket with massive jaws that would close on the spoil, raised it vertically 70 or more feet into the air, and then travel hundreds of feet in either direction to discharge its contents. Making the great cut was recognized from the start as one of the greatest challenges in building the canal, and contracts for the west-side section were let early, since potentially unknown complications could have threatened completion of the entire system.<sup>22</sup>

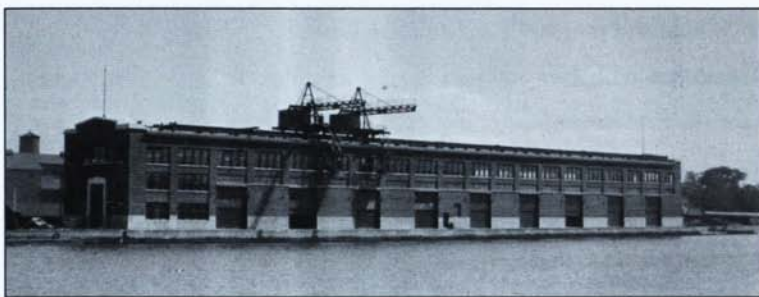
The final great feat was canalizing the Genesee River through Rochester from Genesee Valley Park to Court Street. This was accomplished by constructing the Court Street



*The freight house (foreground) and the terminal warehouse (background) in Rochester Harbor, 1922. From the New York State Archives.*

Dam, which raised the level of the river, blasting away the rapids and rock ledges near Brooks Avenue, and building the Rochester Harbor. The harbor included a freight house and terminal warehouse with gantry cranes on the roof. This section of the river thus became the Genesee Arm of the Barge Canal.





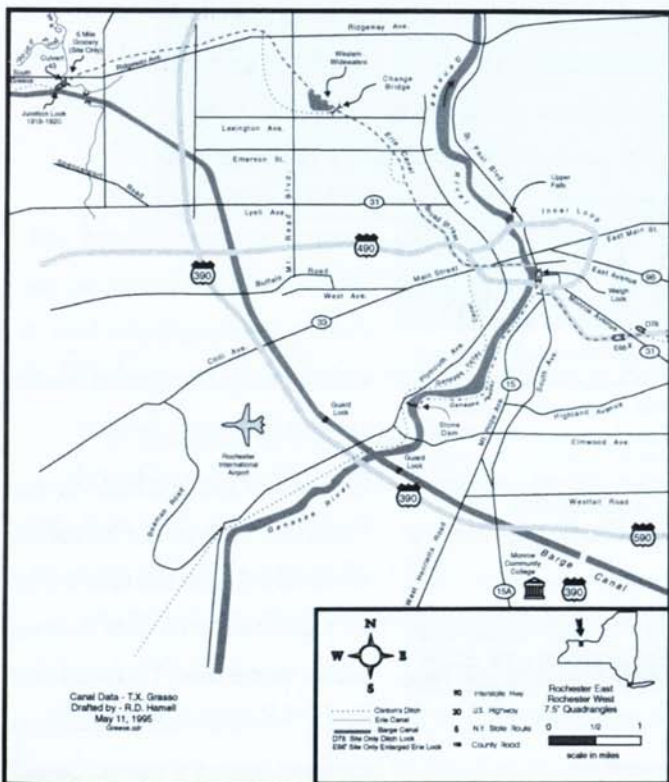
*The terminal warehouse in Rochester Harbor as viewed from the west bank (now Corn Hill Landing) looking east, 1922. Note the gantry cranes on the roof of the terminal. From the New York State Archives.*

In a way, the entire Rochester section of the twentieth-century canal was an echo of Nathan Robert's achievement at Lockport in the nineteenth century. Each project was a crucial component to the opening and successful completion of the "ditch" of which it was part—DeWitt Clinton's and Teddy Roosevelt's. In the end, the Genesee Arm came on line before it was fully completed. The Rochester Harbor was still incomplete when the Barge Canal opened on May 15, 1918, although the canal was navigable between Tonawanda and Waterford.

Since the harbor facilities were not complete in 1918, the old Erie Canal was maintained through Rochester until the end of the 1920 season so that at least the old-style boats could access the city center. For two years, the old and new canals co-existed. This posed a bit of a challenge since the crest of the Court Street Dam, which controls the elevation of the Barge Canal upstream to the crossing at Genesee Valley Park, east to Lock 33, and west

probably to Holley, was three feet higher than the level of the old Erie through downtown and across the aqueduct.<sup>23</sup> The difference in elevation between the two waterways was overcome by the Junction Lock built west of Long Pond Road and south of Ridgeway Avenue near the point where the old and new canals merged seamlessly into one.<sup>24</sup> The Rochester Harbor Terminal was ready for service at the

*The Junction Lock and the route of the original and Enlarged Erie Canal and the Barge Canal through the western part of Rochester. From The Canal Society of New York State, 1995.*



opening of the 1921 season. With the new waterway fully operable, downtown Rochester was left void of Erie water for the first time in 98 years.

## The Canal System Today

The Barge Canal was built solely as a cargo-carrying waterway, but although commercial traffic has diminished since the mid-twentieth century, the waterway is far from dead. Today, there is an awakening to the system's value as a commercially viable waterway, as demonstrated in recent years by the tonnage and value of cargo carried by the New York State Marine Transportation Highway Company of Troy. But the rejuvenation is not limited to commercial traffic. Over the past 40 to 50 years, there have been major improvements along the canal, including many in Monroe County. From Fairport on the county's east side to Brockport on its west, there has been a



*The Sam Patch provides guided tours of the canal. From the Rochester City Hall Photo Lab.*



*Rochester Harbor, 1920. The water behind the old Court Street Dam is 512 feet above sea level; the elevation of the old Erie Canal crossing the aqueduct (foreground) is 509 feet above sea level. Today, the Rochester Riverside Convention Center occupies the site of the former Archer Manufacturing building. The Rochester Gas & Electric Substation (immediately south of the Archer building) and the Lehigh Valley Railroad Passenger Station (now Dinosaur Bar-B-Que) on Court Street are also visible.*

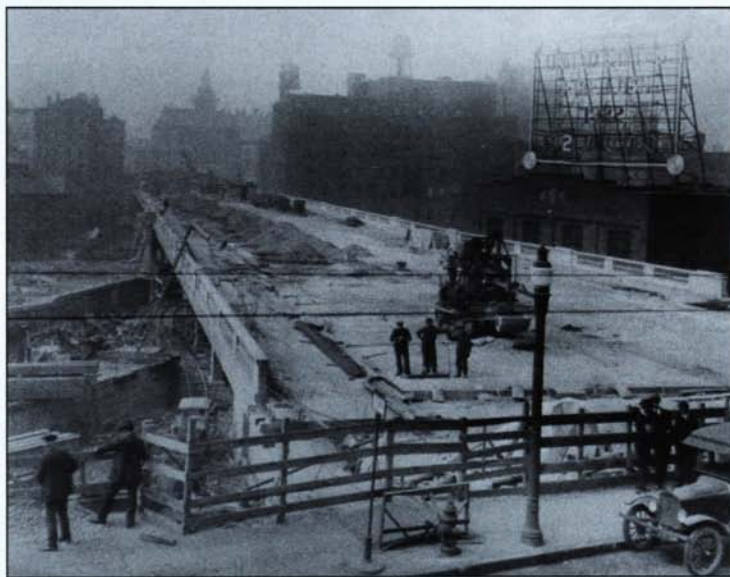
*From the New York State Archives.*

renaissance. Fairport's Packett's Landing and marina and Pittsford's Schoen Place speak volumes to the value of the Erie Canal today. Fairport boasts a variety of new canal-side developments, including housing, restaurants, shops, and offices, as well as a dock for the *Colonial Belle* excursion boat. A similar multi-use complex can be found at Pittsford's Schoen Place, which also offers boat trips aboard the *Sam Patch*. And the historic Port of Pittsford, on

the opposite bank, has been transformed into a park. It offers boat tie-ups and has become a popular spot for summer concerts. Spencerport now offers boat trips aboard the *Rose Lummis*, and Brockport recently completed its Canal Front Welcome Center for boaters and land-side users alike.



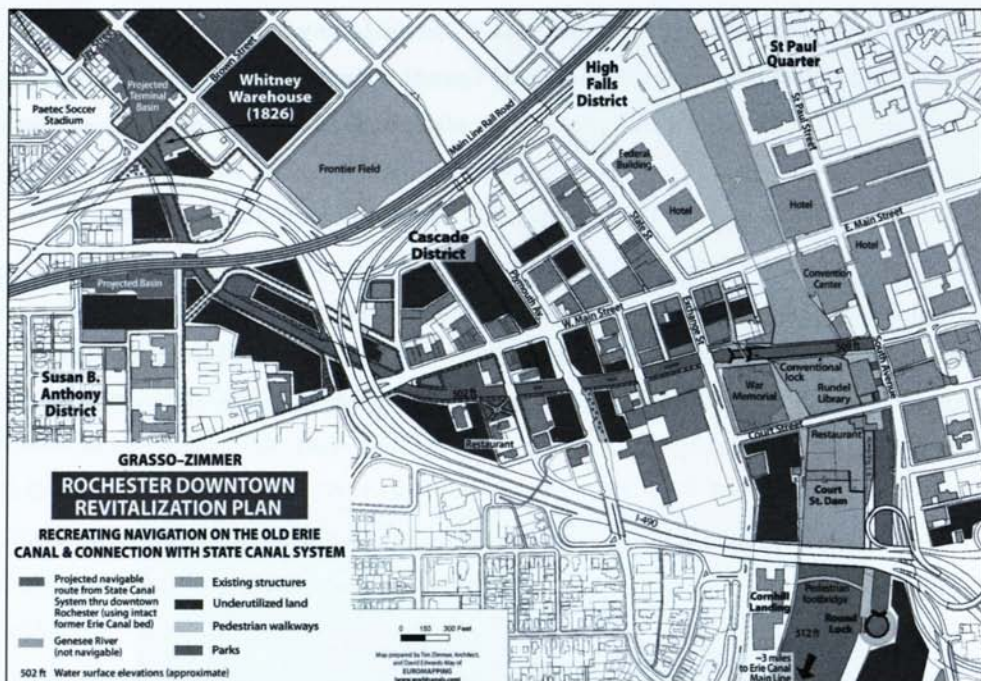
In Rochester, the old Barge Canal Harbor Terminal site is being transformed into a modern housing development, Erie Harbor Park. Corn Hill Landing, on the opposite bank, features a retail and housing complex, docking for pleasure boats, and excursions aboard the *Mary Jemison*, all with a striking view of the Genesee River, the canal, and the new Susan B. Anthony-Frederick Douglass Memorial Bridge that carries Interstate 490 over the canal. Farther south, across from the University of Rochester, the new Brooks Landing includes a hotel and docking facility, and canoes and kayaks can be rented at the Genesee Waterway Center in Genesee Valley Park. The Canalway Trail ties all of these developments together, and allows hiking, biking, rollerblading, picnicking, fishing, and countless other activities at little or no cost.



*The Broad Street Bridge was built over the Erie Canal aqueduct in Rochester, 1923. From the collection of the Rochester Public Library Local History Division.*

## A Vision of the Future: Restoring Rochester's Erie Canal

In downtown Rochester, the 1842 aqueduct has stood mostly silent since the last subway trolley rolled across it almost 55 years ago. The old canal bed that arcs northwest to Brown Street has been shrouded in darkness beneath Broad Street for nearly as long, although freight cars did bring paper to the Gannett newspaper building through most of the twentieth century. Now, city leaders are contemplating an ambitious plan to re-water these sections of the Erie Canal. The nineteenth-century canal bed is intact beneath Broad Street from South Avenue northwest to Brown Street. Another short north-south section remains beneath the Rochester Public Library's Rundel Memorial Building and Court Street to a point nearly opposite the



*The Grasso-Zimmer Plan for restoring the old Erie Canal to downtown Rochester features a round lock (lower right) and the restored Whitney Basin at the northwest terminus, here labeled Terminal Basin. Courtesy of David Edwards-May, President, Euromapping (Grenoble, France).*

intersection of Woodbury Boulevard and South Avenue. The challenge would be connecting the existing Barge Canal to the old Erie, since the water in the new canal behind the Court Street Dam is three feet higher than the level of the historic Erie Canal through downtown.

The problem could be overcome and the two canals joined by building a new channel from the east side of the Genesee Arm, north a very short distance until it merges with the intact iconic old Erie Canal bed just beyond the Anthony-Douglass Bridge. A round lock, a structure unknown in North America, would be the crucial link between the two canals.<sup>25</sup> Boats would enter the lock from gates on its west side, drop three feet as the lock is drained, pivot in the lock, then egress through gates on the north side. All that remains is to remove Broad Street and add water. An abundant water supply—the existing Barge Canal could feed the old Erie Canal—makes the plan feasible.<sup>26</sup>

The restored canal would cross the Genesee River on the 1842 aqueduct, then curve northwest to Jay Street in a great arc. Between Brown and Jay streets an expanded Whitney's Basin would be recreated as the end point. Boats could dock there and then return to the Genesee Arm. The vision is to transform Rochester in much the same way that waterways have made over San Antonio, Oklahoma City, and Providence, Rhode Island. Bergmann Associates of Rochester has proven the plan's feasibility, and students at the Genesee Community Charter

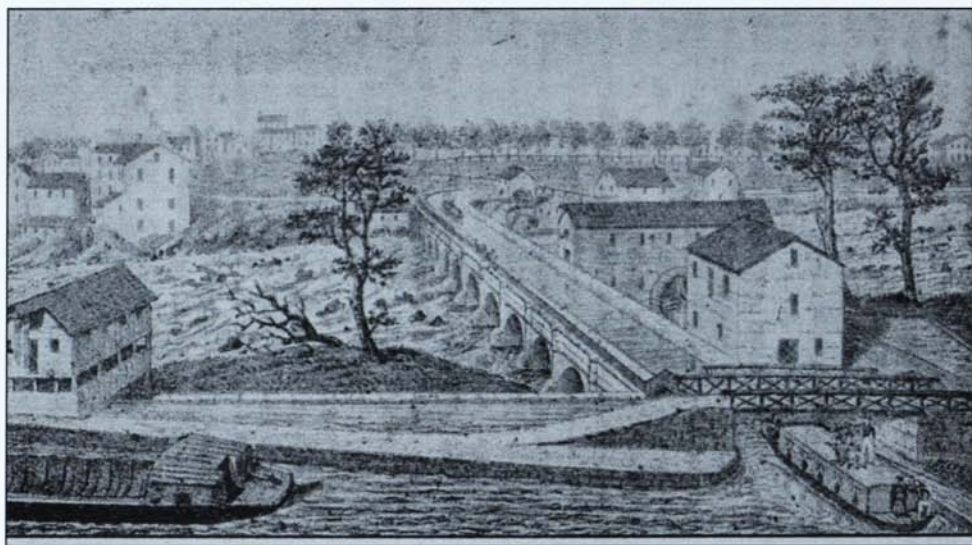


School, under the direction of school leader Lisa Wing and faculty member Lisa O'Malley, have generated studies arguing that a re-watered downtown canal is long overdue.

The City of Rochester hired FRA Engineering PC of Henrietta to study a limited portion of the Broad Street Corridor from South Avenue to West Main Street. After examining all of the options that had been voiced for the corridor, the consultant team published its results in a document entitled *Historic Erie Canal Aqueduct & Broad Street Corridor Master Plan* (May 2009). The plan puts forth three options, all of which include restoration of the aqueduct. The most aggressive of the options (Option 2) shows the round lock and the old Erie Canal fully restored from the aqueduct to West Main Street. The other two options leave various stretches of Broad Street intact, thus allowing fewer sections of the old canal to be fully re-watered. Whatever option the city ultimately chooses, the Master Plan makes it clear that the old Erie Canal could be a powerful economic development tool. Restoring it might just give "The Young Lion of the West" something to roar about once again.



*Construction of the Rochester Subway in the Erie Canal aqueduct, c. 1922-24. From the collection of the Rochester Public Library Local History Division.*



*An illustration showing the first Erie Canal aqueduct over the Genesee River, completed in 1823. It was situated just north of the location of the existing 1842 Aqueduct, which later became Broad Street. From the collection of the Rochester City Hall Photo Lab.*

## About the Author

**Thomas X. Grasso** is President of the Canal Society of New York State and First Vice-President and President Emeritus of Inland Waterways International. He has authored numerous publications on New York State, French, British, and German canals, and on New York State geology.

Grasso was Co-Chair of the World Canals Conference held in Rochester, New York, September 10-15, 2000, and is Chair of the World Canals Conference 2010, which also is taking place in Rochester. He is the author of the plan to remove Broad Street and restore the old Erie Canal to Rochester's downtown in its original bed across the city's intact 1842 aqueduct.

One of six children born to Italian immigrant parents in Lackawanna, New York, Grasso received a Bachelor of Arts Degree in Geology from the University of Buffalo and a Masters Degree in Paleontology and Stratigraphy from Cornell University in 1966. He was chairman of the Geology Department at Monroe Community College from its formation in 1970 until he retired in 1999. In 1988, Grasso received the prestigious SUNY Chancellor's Award for Excellence in Teaching.

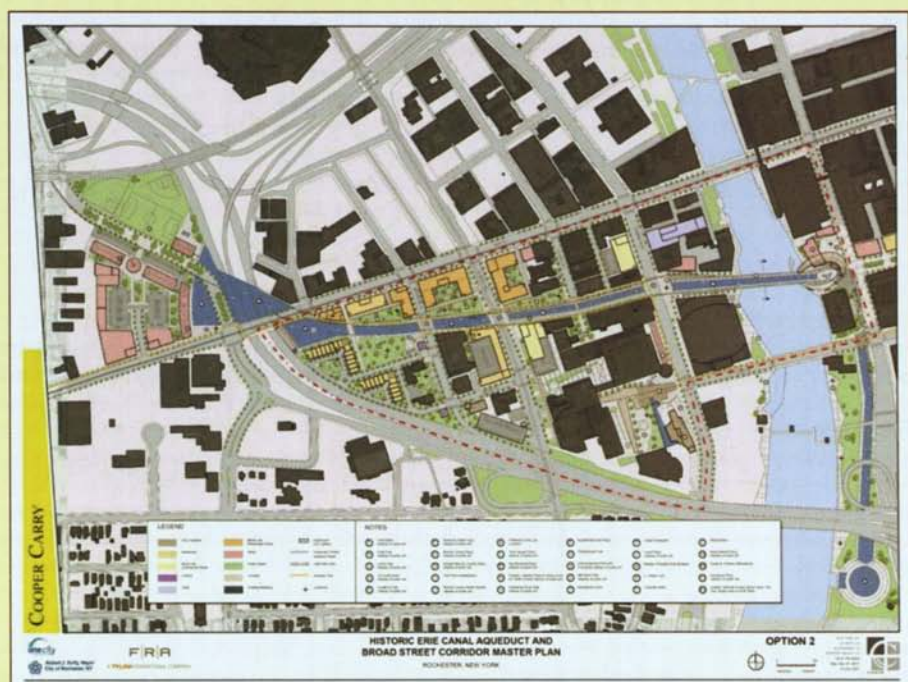


## End Notes

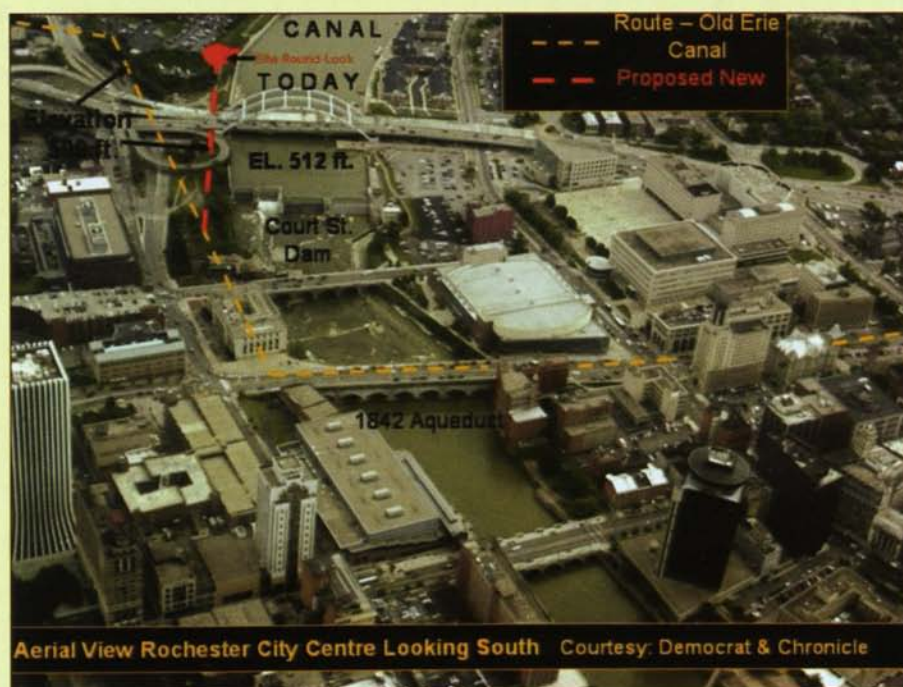
1. See Roger Squires, *Britain's Restored Canals* (Ashbourne: Landmark, 2007). He argues that for every one unit of monetary exchange invested by government, seven times that amount is invested by the private sector.
2. Good histories on the development of the Erie Canal include: Ronald E. Shaw, *Erie Water West: A History of the Erie Canal 1792-1854* (Lexington: University of Kentucky Press, 1966); Carol Sherriff, *The Artificial River: The Erie Canal and the Paradox of Progress, 1817-1862* (New York: Hill and Wang, 1996); and Noble E. Whitford, *History of the Barge Canal of New York State* (Albany: J.B. Lyon Co., printers, 1922).
3. Clinton's private journal can be found in William W. Campbell's *The Life and Writings of De Witt Clinton* (New York: Baker and Scribner, 1849), 27-204.
4. In the Assembly, 19 of the 36 negative votes came from New York City and surrounding counties. There were 64 affirmative votes, and 22 "Not Recorded."
5. The first permanent settler was Hamlet Scrantom. The original Upper Falls was a cascade of 14 feet in three separate steps that was located where Broad Street is today and immediately downstream (north). It was blasted to make way for the aqueduct and other later riverbed improvements.
6. Blake McKelvey, "Rochester and the Erie Canal," *Rochester History* 11, nos. 3 and 4 (1949).
7. *A Directory for the Village of Rochester* (Rochester, N.Y.: Elisha Ely, 1827), 114.
8. Henry O'Reilly, *Settlement in the West: Sketches of Rochester, With Incidental Notices of Western New-York* (Rochester: W. Alling, 1838), 416.
9. Journal C, Asa Fitch papers, Manuscripts and Archives, Yale University Library, New Haven, Conn.
10. Until relatively recently, High Falls was called Upper Falls, which only added more confusion to an overly confused nomenclature of Rochester waterfalls. For more details about the falls, gorge, mills, and industries along the Genesee River in Rochester, see Thomas X. Grasso, "Geology and Industrial History of the Rochester Gorge: Part I," *Rochester History* 54, no. 4 (Fall 1992), and "Geology and Industrial History of the Rochester Gorge: Part II," *Rochester History* 55, no. 1 (Winter 1993).
11. See McKelvey, "Canaltown, A Focus of Historical Traditions," *Rochester History* 37, no. 2 (April 1975).
12. Ibid.
13. McKelvey, "Rochester and the Erie Canal," *Rochester History* 11, nos. 3 and 4 (1949), 6-7.

14. Ibid, 10-11.
15. The locks in Wayne and Monroe counties were not twinned by 1862. They stood as single chambers, although of enlarged dimensions. They were finally twinned in the middle of the 1870s.
16. F. V. Greene, *Report of the Committee on Canals of New York State 1899* (Albany: Brandow Printing Co., 1900). The committee considered the option of constructing a canal large and deep enough to accommodate ship traffic but ultimately decided that a barge canal was more efficient and cost-effective.
17. Noble E. Whitford, *History of the Barge Canal of New York State* (Albany: J.B. Lyon Co., printers, 1922), 51.
18. New York (State), State Engineer and Surveyor, *Report on the Barge Canal from the Hudson River to the Great Lakes* (Albany: J.B. Lyon, 1901). The survey was a monumental, detailed account over 1,000 pages long that included maps of various alternate routes, hydrology, plans of locks, bridges, and so forth. It is generally and unofficially known as the *Bond Report*.
19. The total cost ballooned to approximately \$150 million because of the Cayuga and Seneca Canal add-on and the addition of canal freight warehouses and terminals. Interestingly, an obvious disconnect between the engineers and the legislature is evident in the naming of the canal. Although every report issued by the State Engineer and Surveyor refers to the Barge Canal, this phrase does not appear in any legislative bill or official document reviewed by the author.
20. Michele A. McFee, *A Long Haul: The Story of the New York State Barge Canal* (Fleischmanns, N.Y.: Purple Mountain Press, 1998), 50-51.
21. The powerhouse still stands. Today, the locks are powered by RG&E's electrical grid.
22. For more details, see Thomas X. Grasso, *The Erie Canal, Monroe and Orleans Counties (Bushnell's Basin to Medina) Field Trip Guide* (Rochester, N.Y.: The Society, 1995).
23. 512 feet above sea level vs. 509.
24. The Junction Lock's remains are still visible.
25. There are only three round locks in the world—all in Europe—but only one is still in operation: the round lock at Agde on the Canal du Midi in the south of France.
26. The plan was originally conceived by the author, architect Rory Zimmer, and city planner Tim Zimmer, and assisted later by local businessman Michael Hess.





*The City of Rochester's Master Plan, Option 2, showing a fully restored old Erie Canal to West Main Street.*



*Aerial view of downtown Rochester looking south showing the site of the proposed round lock and new canal route. Photograph courtesy of the Democrat and Chronicle Media Group, [www.democratandchronicle.com](http://www.democratandchronicle.com); enhancements by Thomas X. Grasso*



*An early twentieth-century view of the Erie Canal aqueduct looking north along present-day South Avenue. The aqueduct, built in 1842, replaced an earlier one that was constructed in 1823.  
From the collection of the Rochester Public Library Local History Division.*



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