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Historic Broad Street Bridge and the Erie Canal Sesquicentennial, 1825–1975

by Joseph W. Barnes

Few events caused as much stir – or, for the matter, had as much practical effect – as the opening of the Erie Canal during the early days of Rochester. Governor DeWitt Clinton's "Grand Canal" had been authorized by the state legislature in 1817 (the same year Rochester's one thousand residents were granted a village charter), but it was not until 1823 that the canal was finished as far as Rochester, and not until October 26, 1825 was the canal officially declared complete. At 10:00 A.M. on that day the *Seneca Chief* entered the canal at Buffalo, bound for New York. Governor Clinton and a party of dignitaries were on board along with two kegs of Lake Erie water earmarked for a "wedding of the waters" ceremony in the Atlantic Ocean. Jesse Hawley of Rochester, who was on hand for speechmaking, declared that New York had "made the longest Canal – in the least time – with the least experience – for the least money – and of the greatest public utility of any other in the world."

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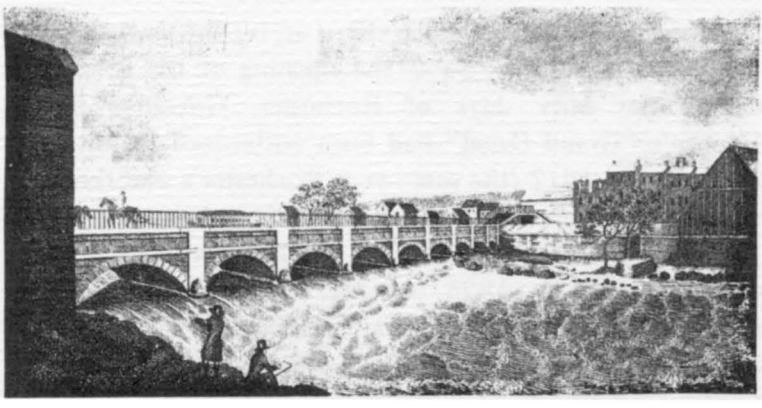
As the *Seneca Chief* pulled away from the Buffalo basin, news of the event was signaled throughout the state by cannons spaced a few miles apart along the route. All along the canal farmers and townsmen gathered to see the procession of official boats and to participate in gala celebrations. On the afternoon of October 27th the Governor's party paused briefly in Rochester for prayer and speeches in the Presbyterian church. Another boat, *The Young Lion of the West,* filled with Rochester leaders and the products of the Genesee country, left with the procession. Afterwards, the jubilant village celebrated at a grand ball and "general illumination."



View of the First Aqueduct from the East
Reproduced from Cadwallader D. Colden, *Memoir . . . of the New York Canals* (New York, 1825).

The dignitaries who traveled the western section of the canal one hundred and fifty years ago saw several impressive engineering feats: the great cut through solid rock near Lockport, and the double set of five locks there, the great embankment rising as much as 70 feet above the floor of the Irondequoit Valley; the line through the Cayuga marshes which had to be dug in water a foot deep. But to many the

most impressive construction feat of all was the stone aqueduct carrying the canal over the Genesee River at Rochester.

The fact that the canal was made to cross here and not at some more southerly point was deeply significant for the future development of Rochester. The manner of crossing was important as well. Quite apart from the aqueduct's monumental attractions – which earned the favorable comment of tourists for decades – its practical purpose was to eliminate the dangers inherent in high-damming the Genesee and the deprivation of water power rights such a design might have caused. Present-day Broad Street Bridge in the heart of Rochester rests solidly upon the limestone arches of the second Erie Canal aqueduct, the "new" structure built a few feet from the first aqueduct which it replaced in 1842. Throughout Rochester's history the aqueduct crossing, like the Erie Canal itself, has had a major influence in shaping the city's physical features. Although canals no longer figure greatly in the economic life of western New York, Broad Street Bridge in its twentieth century adaptation continues to play an important role in transportation while serving as a visual reminder of Rochester as canal town.

Two Aqueducts

The Erie Canal constructed through Rochester in the early 1820's represented the fruition of schemes and plans dating from at least a century before. As early as 1724, Cadwallader Colden, Surveyor General of New York, urged the importance of exploiting new trade routes in the colony's western wilderness. In Colden's view, the interrupted chain of lakes and rivers west of Schenectady would make it possible for New York's merchants to gain access to the great lakes system – an advantage in the perpetual competition with the

French north. Explorers and traders did make limited use of the Mohawk and Oswego Rivers and Oneida Lake for western travel, but it was not until after the American Revolution that improvement of the water route was begun. The Western Inland Lock Navigation Company was incorporated by the state legistature in 1792. With scarce financial sources, the company was unable to accomplish a great deal, but a start was made in lock construction near the falls of the Mohawk.

The idea of digging a great canal from Lake Erie to the Mohawk Valley was publicized some years later by an improverished merchant from Geneva, New York, who sketched out his plan in a series of essays written while serving a twenty-month confinement for debt. Jesse Hawley's essays published in the *Genesee Messenger* in 1807 and 1808 gained small circulation, but may have been influential in the state legislature where $600 was appropriated for a canal survey. James Geddes, the surveyor in charge, visited the Genesee region late in 1808. A large question at issue was whether a state canal project should follow the Oswego River route to Lake Ontario, or should press westward to Lake Erie as Jesse Hawley had proposed. Luckily for the future of Rochester, Geddes discovered no serious obstacle to the western route.

The debate over canal routes dragged on for years, however. The war with Britain in 1812 cooled some of the enthusiasm for the Oswego-Ontario route, but settlements along the state road such as Auburn, Canandaigua, and Batavia now began arguing for a southerly route. Geddes was sent to make another survey in 1816, in the course of which he carefully considered the route over the southern foothills. Once again he reported that the most practical route involved a river crossing a short distance above the Genesee falls. The Genesee would supply the necessary "head" of water for miles in both directions. Geddes suggested that the canal could cross over the Genesee behind a ten-foot dam which

would also impound the river's water for use in the canal.

Meanwhile, Nathaniel Rochester's village site south of the main falls had already attracted several hundred settlers. In addition to its water power, the little hamlet boasted of the only river bridge north of Avon – a wooden structure at the site of present Main Street Bridge. These were real advantages which stimulated commercial development even before Erie Canal construction was begun. On the east side of the river across from Col. Rochester's One Hundred Acre Tract, Elisha Johnson was busily engaged in the summer of 1817 blasting a millrace and throwing up a low dam (in the vicinity of present Court Street dam) to help supply it with water. In November the young settlement experienced one of its first natural disasters. A sudden rise in the level of the Genesee flooded the village on the west side, and blame was placed on Johnson's milldam. The damage was soon repaired, and the setback was only minor, but the flood underscored the hazards of damming the Genesee in the village. For this reason the inhabitants of Rochester were gratified to hear the state Canal Commission's decision to construct a stone aqueduct, rather than an impounding dam, across the river.

The first aqueduct, completed in 1823, was 802 feet long and carried a water trough 17 feet wide. It rested on nine arches built of sandstone taken from the Genesee River gorge a few miles away. The checkered history of this first aqueduct began with construction delays and ended with rapid disintegration. The original construction contract was won in 1821 by William Britton, fresh from successful completion of the state's new prison at Auburn. Britton imported several dozen convict laborers, who decamped whenever convenient and generally demonstrated the shortcomings of forced labor. A new contractor promised completion in 1822, but problems with materials and minor washouts delayed completion of the work until September, 1823.

The aqueduct was described as one of the longest stone structures in the world, and was hailed at first as a monument to its builders' ingenuity. It was not long, however, before disquieting complaints about the aqueduct's design and execution were heard. Of necessity, the canal took a sharp left-hand turn (as viewed by westbound traffic) just before the Genesee River crossing. To enter the first aqueduct, boats had to negotiate a virtual ninety-degree turn in a confined space. The narrowness of the 17-foot channel would permit only one-way traffic, causing traffic jams and numerous fist fights among boat crews during busy seasons.

An even more serious flaw was the choice of local sandstone for the aqueduct's trough and supporting arches. The stone proved too weak and porous for a structure so exposed to the elements. But civil engineering in America was in its infancy, and Benjamin Wright, the designer chiefly responsible, may be excused for his error. The use of sandstone in the Rochester aqueduct served as an object lesson to later engineers. The following quote is from a geological survey of the state included in Assembly *Documents*, 1836, No. 9:

> The importance of ascertaining the mineralogical composition of rocks employed for building, may be readily understood by a reference to some of the circumstances attending the construction of the Rochester aqueduct . . . . This structure is now so nearly in ruins in consequence of the disintegration of the stone, that contracts have already been made for reconstructing it. The material referred to is a porous sandstone; and it would not have been difficult to foresee, if its mineralogical structure had been critically investigated, the consequences which have ensued. In so severe a climate, water insinuating itself into the interstices of the stone, must freeze and force its particles asunder. As the capacity of the Erie canal is to be increased, the Rochester aqueduct, which would be altogether insufficient for the transmission of the quantity of water required for navigating the enlarged channel, must have been partially rebuilt within a short time. Its decay, from the cause referred to, therefore, is not to be deemed a total loss. But it illustrates the necessity of ascertaining, as far as possible, before a material is used for a given work, whether it possesses the requisite durability.

Even as early as 1830, the aqueduct showed serious signs of deterioration. In 1833, the state Canal Commissioners made a personal inspection, having received reports that "it was in a state of rapid dilapidation." Expert opinion said that minor repairs might see the aqueduct through one season of navigation, but that is could not be safely relied on for any great length of time, and that steps should be taken "to obviate all injury from sudden failure." The situation had, in other words, become urgent. Lacking legislative authority for reconstruction, the Commission ordered temporary reinforcement with wooden timbers and sent annual warnings to the state Assembly. By 1836 the Canal Commissioners' *Report* noted that "the decayed state of the aqueduct at Rochester permitted a considerable quantity of water to filtrate through the joints which . . . [hastened] the decay of the stone in the parapet walls and arches."

The state's tardy response to warnings about the Rochester aqueduct could be partly attributed to normal governmental sluggishness, but it's well to point out that canal improvements had become a leading issue in state politics during these years. The dramatic success of the Erie Canal during its first decade had quieted critics of the project. In fact, DeWitt Clinton's old opponents, who were now found in the Whig party, became champions of canal enlargement, while Democrats in Albany assumed a more conservative position on government spending. Moreover, there were arguments over the details of an improvement program. Whether full-scale enlargement should be undertaken all at once, or whether bottlenecks in the canal (such as that at Rochester) should be eliminated one by one was a policy question of some substance, as were arguments over final dimensions.

The original Erie Canal adhered to a standard of "forty feet wide and four feet deep." Advocates of enlargement could agree that this was inadequate, but it was not until after a

spirited controversy that the Canal Commissioners adopted a standard of 70 by 7 feet in 1838. Those dimensions represented a compromise between an 80 by 8 feet standard, called for by a canal convention held at Rochester in 1835, and the more modest proposals advanced by fiscal conservatives. Because of costs, and further political entanglements, even the seventy-foot standard was not achieved for many decades.

The arguments over replacement of the aqueduct at Rochester duplicated the statewide controversy on a small scale, where they did not overlap. One of the first proposals for replacement of the aqueduct, submitted by canal engineer Holmes Hutchinson in 1834, contained no fewer than six alternate plans. Hutchinson considered 1) a stone aqueduct, 35 feet wide, 2) a stone aqueduct 17 feet wide, 3) a wooden aqueduct 35 feet wide, 4) a plan for "extending the navigation over the Genesee river" (behind a dam), 5) a plan for building a temporary wooden trunk above the existing aqueduct, and 6) a scheme for building a stone aqueduct, 35 feet wide, "so constructed that a part of it . . . may be used while the remainder is constructing." [Assembly Documents, 1834, No. 88] Such an array of alternatives supplied the material of debate. It is not suprising that Rochester became the marshalling point for political attempts to win canal improvements. Merchants, millers, and editors, notably the local booster Henry O'Reilly, found themselves at the head of the statewide campaign for enlargement; in Rochester, pro-canal sentiment crossed party lines. Of course, it was insisted that Rochester must have a first-class replacement for its canal aqueduct.

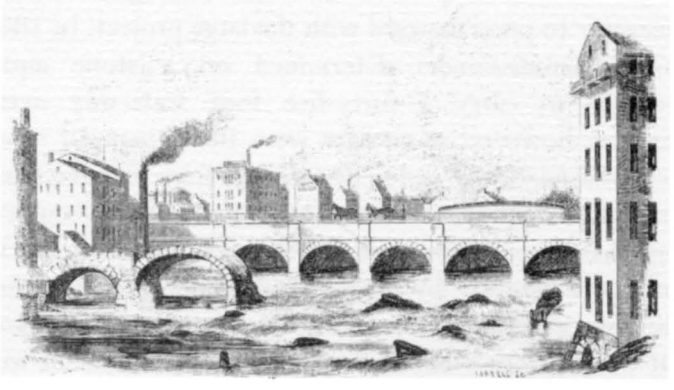
An act of the state legislature in 1835 did authorize new canal construction (to be paid for from surplus canal revenues) and permitted the beginning of some preliminary work in the Genesee River. In December of that year, a Rochester newspaper noted that the Canal Commissioners'

contracts "are to contain stipulations prohibiting the use of ardent spirits on the work." The newspaper added, with some satisfaction, "that such a regulation has a tendency to prevent accidents, secures quiet, and laborers do more work without ardent spirits than with." The Canal Board's temperance reform is only a sidelight in the story of the aqueduct, but the manner in which it was received is an interesting commentary on the passing of an American tradition.

More than temperance reforms and good will were necessary to press forward with the large project. In 1836 the Canal Commissioners determined on a stone aqueduct designed to carry a forty-five foot waterway over the Genesee; however, so meager were their financial resources they pessimistically ordered materials for a wooden trunk, in case the old aqueduct failed. The *Daily Democrat* reported in May that preparation work for the new aqueduct had begun "in good earnest, by prostrating some of the remaining buildings which are to be removed to make more sea room." But it was impossible to begin actual construction without large-scale financing. Early in 1837 Henry O'Reilly organized a gathering at Rochester of representatives from various parts of the state, which drew up a petition calling for action on canal enlargement plans. The "Western Canal Convention" proposed that the state should immediately borrow funds financed with anticipated canal revenues. The Assembly elections in the fall favored the Whig party, and in 1838 the legislature approved the historic "Act for the more speedy enlargement of the Erie Canal." An initial debt of four million dollars was authorized. The loan was financed not with expected tolls, but on the state's general credit, much to the chagrin of Henry O'Reilly and other Democrats.

The practical effect of the new policy was witnessed in Rochester during the building season of 1838, as boatload after boatload of cut stone arrived from the east. The canal

itself supplied a means for bringing in a superior material: Onondaga limestone from the Split Rock quarry near Syracuse. Unlike the local sandstone used in the first aqueduct, now literally falling into the Genesee, Onondaga limestone was a water-resistant material which canal engineers were finding useful in a variety of projects. The choice was a reflection of new sophistication on the part of civil engineers whose skills had been learned during construction of the Erie Canal.



Aqueducts at Rochester
Two arches of the first aqueduct remain; the buildings on either side are flour mills. Published in *Ballou's Pictorial Drawing Room Companion* (Boston, December 15, 1855).

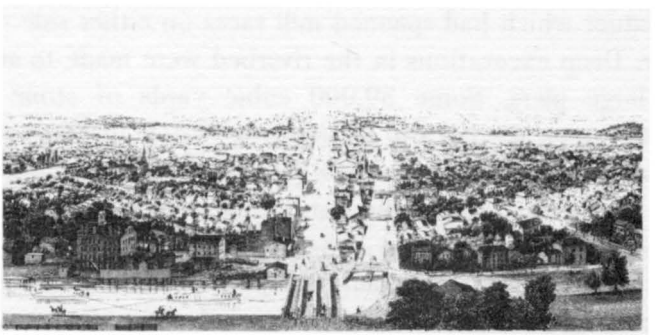
Nathan S. Roberts, the architect of the second aqueduct, was one of the class of early engineers who learned their profession at work on the canal. Roberts was born in 1776 at Piles Grove, New York, and was self educated. He participated in the preliminary surveys for much of the Erie Canal route in 1816. He was "Resident Engineer" in supervision during construction of the section from Rome to Syracuse, and later held a similar post for the stretch from Lockport to Lake Erie. His most impressive work on the

original canal was construction of the series of locks at Lockport. During the 1820's he held jobs on the Pennsylvania and Chesapeake and Ohio canal projects. Before returning to New York, in 1835, he surveyed the Muscle Shoals of the Tennesee River for the federal government, to determine the feasibility of an inland ship canal.

Roberts designed the second aqueduct at Rochester as a greatly improved version of the first. Semicircular Roman arches were again chosen, but the number of arches was reduced from nine to seven. The reduction was made possible by substituting culverts for the end-arches of the first aqueduct which had spanned mill races on either side of the river. Deep excavations in the riverbed were made to anchor six large piers. Some 39,000 cubic yards of stone were blasted from the bottom of the river – crude limestone some of which was later used as "fill" in the walls of the aqueduct. The proportions of the new structure were massive in every respect. Each of the seven arches measured three feet thick at the base and two-and-a-half feet at the crown; each had a span of 52 feet. The width of the aqueduct waterway was set at 45 feet, as has been mentioned; the overall width including parapets was 69 feet. Length was similar to that of the first aqueduct: 444 feet across the river and 800 feet overall. The western end of the new aqueduct was adjacent to that of the old one, but the eastern end was moved a few rods south to eliminate the sharp right-angle turn which had plagued navigators.

Not including the preliminary work in 1836 and 1837, construction of the new aqueduct occupied four years. Its cost of over $400,000 was more than five times that of the first aqueduct, but the local expenditure was welcomed in Rochester, where the effects of the depression following the panic of 1837 had created widespread unemployment. That same depression, combined with the mounting costs of the statewide canal enlargement program and the unwillingness

of politicians to levy taxes to pay for it, drove New York into near bankruptcy. The Rochester aqueduct was completed just before the legislature issued its famous "Stop Law" of 1842, which halted canal projects and incidentally imposed the first state property tax levied since 1827. Incredible as it may seem, New York State's government was financed for fifteen years with only a tax on auctions and a salt duty. The new property tax in 1842 added one mill for each dollar of the taxpayers' assessed valuation.



Rochester From the West, 1853
Charles Magnus Lithograph.

The finishing touch on the new aqueduct was installation of a balustrade fence on both parapets. A Rochester paper proudly pointed out that the balustrade had been "locally manufactured of American iron." On the opening day, April 20, 1842, two boats competed for the honor of a first crossing at 8:00 A.M. One was the "Oneca," a new boat owned by a Captain Lighthall of Troy. The other was General E.S. Beach's "Northumberland," which sported a musical band and a banner waving in the breeze. The "Oneca," according to the *Democrat*, had only a "promiscuous assemblage of citizens on deck." How any sort of fair race could be arranged is a riddle, given the fact there was only

one towpath on the south side. There was subsequent confusion about which boat won the honor. Nevertheless the "unostentatious" ceremony was said to have gone off "with great éclat, and the best of good feeling."

The Imprint of the Canal

The effect of the Erie Canal on Rochester's economic history is a familiar story. Rochester was a village of about 5,000 inhabitants in 1825 when the canal was completed. The village already had established a role as a marketing and milling center for a rich agricultural hinterland, but the canal, which sharply reduced the cost of freightage to the east, accelerated the development of Rochester and the entire region. For some time the economy of western New York was largely extractive, its prosperity dependent on the large scale shipment of flour and other foodstuffs, lumber and ashes, salt and quarried materials. Flour held a special place in this commerce during the pre-Civil War period – leading all other agricultural products in value, and, by 1840, amounting to 40 percent of the value of goods reaching the Hudson. Rochester was the "Young Lion of the West" in 1825; a decade later it was preeminently the "Flour City." Ample water power supplied the motive power for grist mills which shipped 202,000 barrels of flour in 1826. Twenty years later Rochester's dozen or more mills produced a staggering 700,000 barrels annually. For several decades Rochester laid claim as the world's leading city in the production of flour, and only gradually lost this distinction to new milling centers such as St. Louis and Milwaukee.

But flour milling was not Rochester's only economic activity during these initial boom years. The canal spawned important auxiliary industries, among them boat-building, barrel making, and the hotel business. Even more significant

was the growth of a diversified urban economy which accompanied the boom. Side by side with the flour mills there appeared factories for the production of edge tools, cloth, machinery, and other goods. Dozens of wholesale and retail establishments and the shops of specialized tradesmen crowded the streets of the compact city. Rochester's population grew at an average rate of more than one thousand per year: it was 9,200 in 1830; 20,200 in 1840; 36,400 in 1850; and 48,200 in 1860.

The railroads through western New York, which began to appear in the late 1830s, eventually took over the role of the canal – although it was many decades before railroads were sturdy or efficient enough to replace canals as carriers of heavy low-value freight. Locally the peak year for the value of goods shipped on the canal was 1854, one year after the New York Central consolidation in the western part of the state. The railroads had long since captured Rochester's passenger traffic, and thereafter began cornering larger amounts of freight. After the Civil War it became clear that canals would in future play only a secondary part in meeting Rochester's transportation requirements. However even in the twentieth century the Erie and its successor, the Barge Canal, made some economic contribution.

The Aqueduct in Use, 1890
Reproduced from H.R. Page & Co., *Rochester Illustrated.*

The continuing service of the canal in providing low-cost transport of coal, oil, and other bulky freight encouraged supporters to continue arguing for canal enlargements. In the 1880s and 1890s a proposal by the state engineer sparked discussion of a ship canal, 200 by 20 feet, designed to compete with the Welland Canal. Even some federal authorities took this proposal seriously, pointing out the military advantage of a route to the Great Lakes for the Atlantic fleet, should war with Canada occur. The estimated costs of enlarging the Erie Canal to accommodate ships proved discouraging, but an alternate plan for creation of a "Barge Canal," 75 feet wide at the bottom by 12 feet in depth, won approval in 1903. The expensive project – which called for an initial bond issue of 101 million dollars – generated spirited controversy. Support for the Barge Canal was centered in Buffalo, Albany, and New York City. There was widespread opposition in other sections of the state. Leaders of the Rochester Chamber of Commerce and several local editors were among those who denounced the huge expenditure as unnecessary. The Chamber issued a pamphlet prior to the bond referendum titled "Twenty Good Reasons Why You Should Vote No" and the influential *Herald* characterized the project as the canal "steal" and "grab." The bond issue was approved by a substantial margin, largely because of Tammany support in New York City, while voters in almost all upstate counties, including Monroe, recorded sizable majorities in opposition.

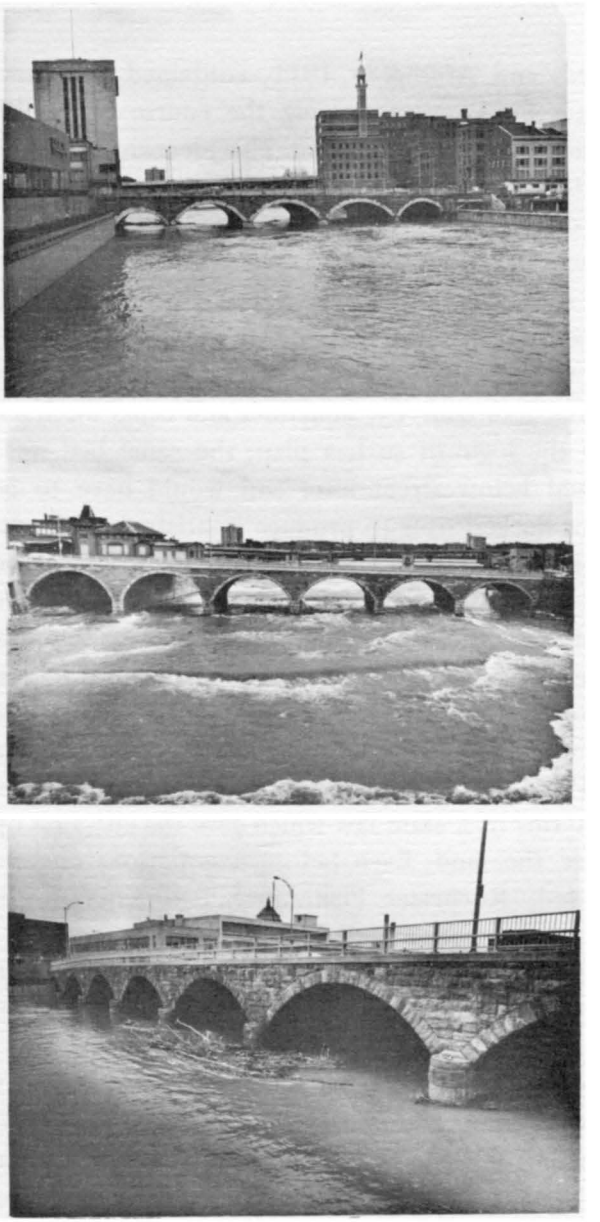
The 75 foot width of the new canal insured the abandonment of the Erie's old right-of-way through the city, but by this time few Rochesterians were about to protest the loss. The canal, once a commercial advantage and focus of busy activity, was now considered a nuisance. The unsanitary ditch intersected dozens of city streets, delayed traffic at the lift bridges, and was a threat to children. Most citizens were glad to hear that plans for the enlarged canal called for a

route skirting the city's southern edge. The new canal would cross the Genesee at water level, a few miles south of an improved Court Street dam. The plan was suggestive of James Geddes' first scheme in 1816, but the twentieth century execution was more sophisticated. The steel dam was designed to be movable, permitting precise adjustments in the upstream water level and providing a new measure of flood protection; concrete walls designed for both sides of the river above the dam enclosed a splendid new harbor facility prepared to receive an expected rush of barge traffic.

Ice Skating on the Aqueduct, c1900
Undated Charles Forbes photograph, Rochester Public Library

Progress on the new canal was agonizingly slow. Construction began in 1904, but in 1917 the Genesee River crossing was still not complete. The World War I emergency hastened completion in 1918, but that same emergency obscured what little public interest there was in the Barge Canal. Its service was inaugurated with little fanfare.

Attention in Rochester was focused instead on new uses for the former Erie Canal right-of-way and the aqueduct. The need for additional downtown streets parallel to Main Street had long been felt. A formal city plan, prepared by Brunner



Three Downtown Bridges
From top to bottom, Main Street (1856), Court Street (1893), and Andrews Street (1893) bridges imitate the stone arch design of the aqueduct. Samuel L. Grassadonia, 1975.

Olmsted, and Arnold in 1911, contained a scheme for an aqueduct boulevard following the course of the old canal westward from South Avenue. This idea, along with plans for converting the eastern and western approaches of the canal into a depressed "speedway" or a trolley route, were actively discussed for several years.

The ambitious plan finally adopted called for an aqueduct boulevard in the downtown section and a subway trolley route, which eventually was named the Rapid Transit and Industrial Railroad. The aqueduct and canal ditch seemed to dictate the logic of such a plan; the canal bed was already depressed below street level and would have to be either filled or decked over to produce a satisfactory boulevard. A major influence in the decision to convert the canal into a trolley line rather than an automobile speedway was the expansion of interurban trolley traffic. The heavy interurban cars were considered unsafe on the street railway tracks, and the projected subway would divert them below street level.

The old Erie Canal route through Rochester was last used in 1919. The following year it was formally abandoned, under terms of a state law which gave the city first option to purchase the land. Even before negotiations on price were completed, Rochester Planning Superintendent Edwin A. Fisher announced a detailed plan for conversion of the aqueduct. Fisher's plan called for a superstructure of reinforced concrete built on the old walls. The superstructure would carry a roadway 52 feet wide with sidewalks 14 feet wide on either side. As the aqueduct itself was less than 70 feet wide, the additional width would be created by cantilevering the sidewalks. The canal trough was reserved for trolley tracks, and early drawings featured a prominent "South Avenue Station" where the Rundel Building is now located.

In 1921 the state's Land Office agreed to sell the Erie Canal properties in Rochester to the city for $1,500,000.

Contractors began work on the downtown section of the subway and boulevard project in April, 1922. The work, at a cost of $1,250,000, was complete by August, 1924. Most of this expenditure was consumed in blasting rock to enlarge the subway bed west of the river, and building a roadway deck to Oak Street. The concrete superstructure on the aqueduct, which transformed it into Broad Street Bridge, accounted for less than half the cost.

The Aqueduct (Broad Street Bridge) after Conversion in 1924

The dedication of Broad Street in 1924 began a new phase in the history of the Genesee River aqueduct, which remains today as one of the finest artifacts of the Erie Canal, not only in Rochester but in any part of the state. The extension of Broad Street east of South Avenue, in conjunction with the development of Midtown Plaza in 1959-1961, emphasized the importance of Broad Street Bridge in managing the downtown traffic flow. Accordingly, in the late 1960s when city engineers discovered serious deterioration of the bridge superstructure – rotted from decades of salt water seepage – officials moved quickly on reconstruction plans. Ironically enough, the 130-year old aqueduct needed only minor attention, while the 50-year old concrete superstructure had to be replaced entirely. The reconstruction was undertaken in

1972-1974 at a cost to the city of some $3,000,000.

There were special elements in the story of this most recent project that reflect the aqueduct's unique place in Rochester's transportation history. When contractors released drawings of a reconstructed bridge with circular "portholes" in place of the small arches of the original superstructure, local historians and architects mounted a vigorous protest. The Rochester Preservation Board, which declared the aqueduct a city landmark, demanded arches. Engineers conceded that arches would cost no more than portholes, and after a brief flurry the plans were altered. But the reconstruction demonstrated concern for the future as well as respect for the past. Designers worked with the Rochester-Genesee Regional Transportation Authority to plan for a long debated rapid transit system, which may use part of the city's old subway route. If the dream of ultramodern transit in the city becomes a reality, historic Broad Street Bridge in downtown Rochester will likely play a central role, and welded high speed tracks may one day rest in the channel that carried canal packets.

Note on Sources

The secondary sources which proved most useful in preparation of this article included Noble E. Whitford, **History of the Canal System of the State of New York,** 2 vols. (Albany, 1906); Ronald E. Shaw, **Erie Water West, A History of the Erie Canal** 1792-1854 (Lexington, 1966); and Blake McKelvey "Rochester and the Erie Canal" **Rochester History,** Vol. XI (July, 1949), Nos. 3 and 4. An article which supplies additional information on the subway is Andrew David Lipman, "The Rochester Subway, Experiment in Municipal Rapid Transit," **Rochester History,** Vol. XXXVI (April, 1974), No. 2. Details on the conversion of the aqueduct into Broad Street Bridge may be found in Edwin A. Fisher, "Engineering and Public Works in the City of Rochester," Rochester Historical Society **Publication Fund Series,** Vol. XII (1933), pp. 157-240. Primary sources (which are sometimes indicated in the text) included **Annual Reports** of the State Engineer and related printed documents of the state government, but chief reliance for local details was the daily press.