

New York's Changing and Enduring Canal

by John C. Callaghan

On November 4, 1825, as Governor DeWitt Clinton ceremoniously poured Lake Erie water into the Atlantic, the size of a young nation was cut considerably. The Governor had as much as strode across all of New York State in a single step, and in so doing, paved the way for New York to become the Empire State. From essays written by a miller in Geneva, NY named Jesse Hawley in 1807, describing the route, cost, and benefits of the future canal with remarkable accuracy, to the inaugural trip of the boat, Seneca Chief, bearing Clinton and his water, it had been a remarkable period in American history. The Erie Canal would precipitate the country's westward expansion, establish settlement patterns for the whole United States, and play a pivotal role in the outcome of the Civil War. Before any of that, it would cut transportation costs in New York by over 90 percent, cut travel time between the Niagara frontier and New York City in half, and make it the busiest port in the nation, a title it would hold for most of the 19th century.

However, the Canal had been built too small.

Demands for Enlargement

Almost immediately, the need to significantly expand the size of the Canal was recognized. The four-foot deep, 40-foot wide ditch was simply overwhelmed as commerce and population along the Canal route exploded, and the economy of New York along with it. In 1835, the enlargement began. The plan would include a seven-foot depth and a 70-foot width, double locks to allow for two-way traffic, and lengthening of the locks themselves. After several fits and starts, the enlargement was declared complete in 1862. In 1882, facing growing competition from the railroads, New York's canals were declared toll free.

In 1895, yet another enlargement, dubbed the \$9 million improvement, was begun in an attempt to compete with other modes of transportation, and to accommodate larger barges. By 1897, most of the money was spent with less than two-thirds of the work accomplished. The ensuing scandal, with money misappropriated and improperly allocated and little work accomplished, was so great that the Republicans declined to re-nominate their incumbent Governor Frank S. Black of Troy, NY. Returning as a hero of the Spanish-American War, Theodore Roosevelt was nominated for, and narrowly won the Governorship of the Empire State.

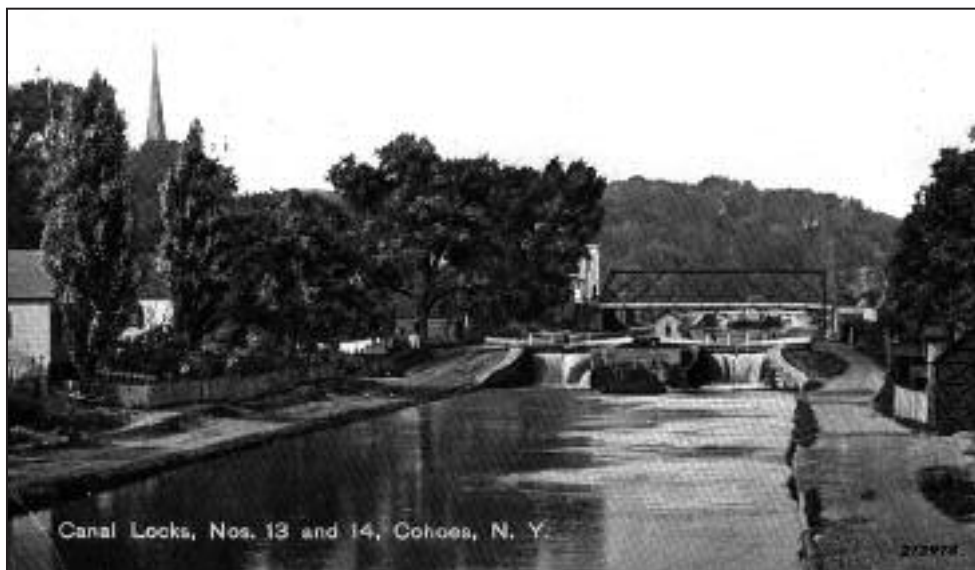
In the meantime, the canal debate continued. Separate from the debate over enlargement of the Erie Canal, an examination was begun of the merits of a ship canal constructed across New York by the federal government. The River and Harbor Act passed by Congress in 1896 had "directed the Secretary of War to cause to be made accurate examinations and estimates of the cost of a ship canal for the most practicable route, wholly within the United States, from the Great Lakes to the navigable waters of the Hudson River, of sufficient capacity to transport the tonnage of the lakes to the sea."¹ The resulting report identified the preferred route for a ship canal, but also concluded that canalizing of the Mohawk River would give better results than a ship canal and at one-quarter the cost.

In 1897, plans were made to replace locks 3 through 18 in Cohoes with a massive lift lock, which would have been the biggest of its kind in the world at the time. The sixteens, as they were known in Cohoes, presented serious challenges and delays for boatmen. The



Cohoes Falls in Cohoes, NY

Photo courtesy of NYS Canal Corp.



Double locks built in Cohoes on the enlarged Erie Canal

Photo courtesy of NYS Canal Corp.

delays had been so great as to result in the construction of the first passenger rail system in the United States from Albany to Schenectady, where travelers would board packet boats and resume their voyage. The lift lock, which would raise and lower boats 140 feet, bypassing the Cohoes Falls and eliminating the sixteens, was never built.

Immediately after taking office, Governor Roosevelt was thrust into the increasingly controversial question of canal enlargement. After having to deal almost immediately with matters pertaining to canal corruption and the \$9 million improvement, Roosevelt then turned his attention to the larger question of whether, and how, to enlarge the canal. He appointed a committee in March of 1899 to “consider the whole canal question and report upon the proper policy to be pursued by the State in the future.”²

Concurrent with the work of this body, was the ongoing study by the New York Commerce Commission, which had been appointed by Governor Black in 1898. This commission suggested that an additional \$15 million be appropriated to complete the \$9 million improvement. Other work, such as the lift lock at Cohoes, had previously been authorized. While never undertaken, these plans were indicative of the myriad of proposed improvements at a time when plans,



Tug tows a fleet of barges toward Lock E-2 on the new Barge Canal

Photo courtesy of NYS Canal Corp.

reports, committees, and commissions pertaining to the canals of New York were almost innumerable.

The much anticipated report of Roosevelt’s committee in 1900 recommended that the canals not be abandoned, and many in fact enlarged. As to the idea of a ship canal between the Great Lakes and the Hudson River, the committee concluded that it was a proper subject for consideration by the federal government, but not by the State of New York.³ Governor Roosevelt agreed, stating publicly that, “The present canal must be enlarged!”⁴

Under the proposal, the Champlain and Oswego Canals would be enlarged consistent with the \$9 million improvement plans. The Erie Canal would be much deeper, with a prism depth of 12 feet, and a depth over the lock sills of 11 feet. Locks on the enlarged Erie would be 310 feet in length by 28 feet in width. In April of 1900, the legislature authorized plans and estimates which would be necessary for the enlargement. In 1901, various options were presented by the State Engineer for routes and costs. Various bills pertaining to canal improvements were introduced, one such bill calling for the aban-

donment of the canals and placing railroad tracks within the canal bed. This vote failed by only four votes, and had it gone the other way, there may very well have been no Erie Canal today.

Barge Canal Moves Forward

A lack of consensus pervaded both houses during the legislative session, but the matter was raised again in 1903. A bill was introduced to provide funds for the improvements, which had been outlined by the State Engineer in 1900. This once again prompted great debate, and a bevy of new ideas, including a 30-foot deep waterway from Lake Erie to the Hudson River. What emerged was the necessity of receiving updated information from the State Engineer on routes and costs. Once this information was transmitted and certain changes to the scope of the project identified, the Barge Canal Act of 1903 passed the legislature and became law. In November, the voters approved the expenditure of \$101 million to construct the improvements.

Ironically, it was the voters of New York City who carried the day, and authorized the expenditure for a project to be built in upstate New York. The construction of the first Canal had been voted for mostly by upstate residents, with downstate residents voting primarily against it. Now, the tide had turned, perhaps because New York City residents realized, most of all, how significant an impact a new waterway could have on economic growth.

The debate over exact dimensions of the new Canal continued between 1903 and the start of construction in 1905. An amendment in 1905 called for the minimum dimensions: 328 feet long, 28 feet wide, and 11 feet deep. However, in developing final plans, designers adopted a 45-foot width and a 12-foot depth to allow certain boats already in use on the Great Lakes to be able to transit the Canal. Unfortunately, an increase of depth to 14 feet – to mirror controlling depths already

in place at the time on certain Canadian canals – was not adopted. This prompted the federal government to later deepen sills between Waterford and Oswego, but never to the full 14-foot depth.

New Canal for a New Age

Construction on the Barge Canal began in 1905 and the entire system was opened by 1918. The Barge Canal featured feats of engineering no less impressive than those of the original Erie Canal. A system of lifts called the Waterford Flight of Five bypassing the Cohoes Falls raised vessels 170 feet in just 1.5 miles, the highest lift in the shortest distance of any system in the world. The system of Mohawk movable dams borrowed from the Czech Republic made taming the mighty Mohawk possible while allowing for the free flow of ice in the winter. The finished product bore an extraordinary resemblance to the canal which had been advocated by State Engineer Martin Schenck in 1892.⁵ The transition to an entirely new waterway, where steam power replaced mule power, was anything but seamless. The period from

continued on page 12




Tug and barge passing pleasure boats in 2004 at Waterford, NY

1895 to 1918 was marked by scandal, intrigue, debate, and great engineering achievements.

The Barge Canal was much more than a fourth enlargement of the most renowned manmade waterway in history – it was an entirely new canal for an entirely new age. Never as successful as its predecessors, the Barge Canal peaked in 1951 at five million tons of cargo moved, or roughly half of what it was designed to accommodate. The Barge Canal, unlike its predecessor, did not establish any settlement patterns, did not revolutionize communication and transport, and did not determine the fortunes of New York and the rest of

Over 50 Years of Full Service Engineering Excellence



Over 600 Highly Trained Professionals
Imagine What We Could Do For You!

CHA

CLOUGH HARBOUR & ASSOCIATES LLP
cloughharbour.com

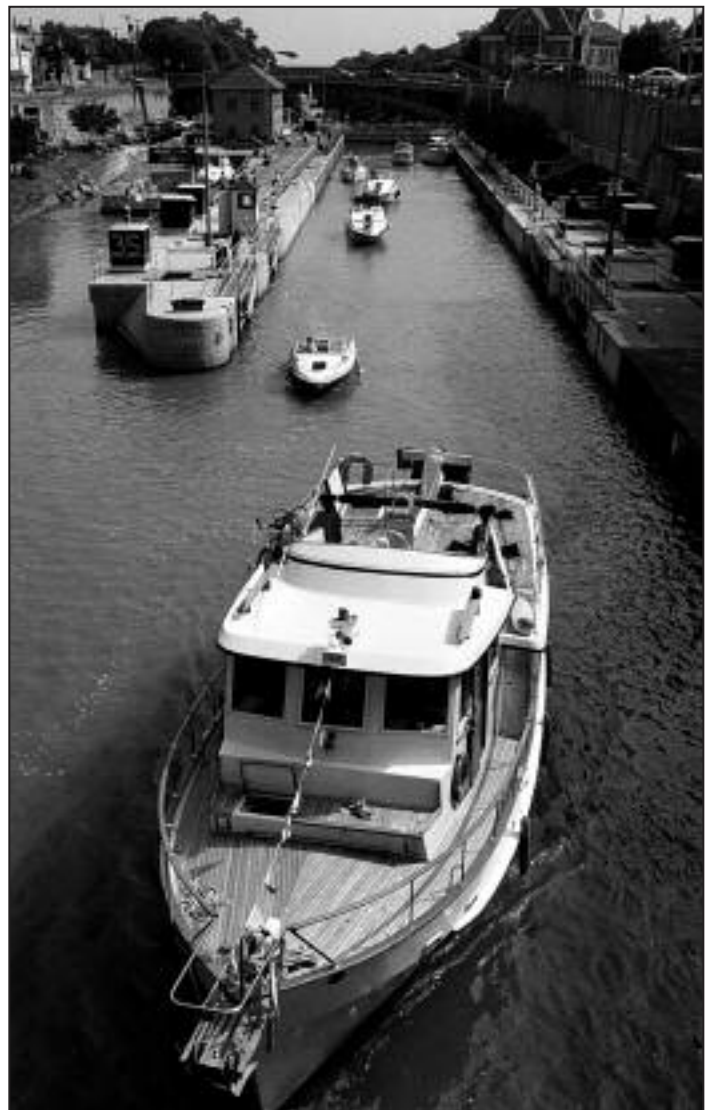
the nation. Instead, it provided a reliable transportation network which was essential to the sustainability of commerce and industry throughout the Empire State, and reasonably contributory to economic development throughout the northeastern United States during the 20th century. Even more importantly, the shortcomings of the Barge Canal design from a commercial standpoint have allowed it to become a vital recreational waterway, yielding immeasurable benefits to communities all along its shores. Today, a healthy mix of recreation and commerce exists on a canal which has endured longer than either of its predecessors, and is still going strong.

John C. Callaghan is Special Assistant to the Director of the NYS Canal Corporation in Albany. He may be reached at 581-471-4220 or John_Callaghan@canals.state.ny.us.

Sources

- 1,2,3,5. Noble E. Whitford, History of the Canal System of the State of New York.
- 4. Michelle A. McFee, A Long Haul.

Photo courtesy of NYS Canal Corp.



Boats leaving Lock 35 in Lockport, NY

Photo courtesy of NYS Canal Corp.