

*The Canals of Northern Illinois and Their Impact on Settlement and Economic Development.* A paper read at the annual meeting of the Pioneer Society of America, 1990.

## **The Canals of Northern Illinois and Their Impact on Settlement and Economic Development**

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In order to understand the importance and value of the canals of Northern Illinois and their connecting rivers, some understanding of the geography of the area is necessary. As early as 1673, it was realized by the French explorer, Louis Jolliet, that the best water link between the Great Lakes and the Mississippi was via the Chicago River over a divide to the Des Plaines River, which joins the Kankakee River about 60 miles from Lake Michigan to form the Illinois, which then flows west and south to the Mississippi. The divide separating the Chicago River and the Des Plaines is about 10 feet.

The source of the South Branch of the Chicago River in 1673 was five miles from Lake Michigan and only five feet above the lake's surface. The separation between Lake Michigan and where the land is at the same elevation, 35 miles southwest, is only 15 feet. This meant that there was only a 15-foot barrier between the largest body of fresh water in the world (the Great Lakes) and the Mississippi drainage.

All the canals in Northern Illinois were built to forge all water links between the Great Lakes and the Mississippi. The first of these links was the Illinois and Michigan Canal. The proposal for such a canal goes back to Jolliet in 1673, but it was not until 1823 that a survey was made for this waterway. In that year the Canal Commission hired Col. Justus Post and René Paul to survey and map several proposed routes. This was done in order to obtain the land the canal passed through from the Federal government. After this initial effort in 1827, the Federal government was prevailed upon to grant additional land, alternate sections of land five miles on either side of the canal route, whose sale would help pay the cost of construction.

Stimulated by this, another Canal Commission in 1830 laid out two towns, Chicago and Ottawa, and advertised the town lots in these towns for sale in Eastern newspapers. The interest in 1830 was limited and the sales insignificant, but it did stimulate increased interest in the area, and by 1833 Chicago was incorporated as a village, and by 1837, as a city with a population of 4000. The prospective canal encouraged settlement, although it was not until 1836 that actual construction began. In 1836 the first spadeful of earth was turned for the canal on July 4<sup>th</sup>. The land hunger was so great that State Canal Commission lots in Chicago sold for \$1,181,475.<sup>1</sup>

The State Canal Commission was determined to encourage settlement and development, for the sale of land was the chief means available to pay for this large public works project undertaken by a still sparsely settled pioneer state. The Canal Commission was very interested in promoting towns and developing industrial bases in those towns wherever possible. Some of these towns promoted by the Canal Commissioners succeeded and survived, and some disappeared. Amongst the latter were Des Plaines, located at the juncture of the Calumet Feeder and the Illinois and Michigan Canal just north of the present town of Lemont; also, Kankakee, laid out where the Kankakee River and the Des Plaines join to form the Illinois, and Dresden a few miles west of this juncture and about 6 miles from the present town of Morris.

Amongst the successful towns were those already existing when construction began, such as Chicago, Joliet, Ottawa, Marseilles and Utica. In Joliet and Ottawa, the Canal Commissioners expended money to provide water power for manufacturing in addition to transportation facilities. This was done either with dams or extensions of the canal, but the purpose was to promote lot sales and development. In Ottawa, for example, the Commissioner built a lateral canal to provide a hydraulic basin in the state-owned section of

Ottawa. This expenditure caused some complaint, but in rebuttal, Commissioners W. F. Thornton and Jacob Fry reported in 1838:

“...the entire (Fox River) feeder, about five miles long, and a considerable section of the side cut have been placed under contract and will probably be so far advanced in another year as to render available the large and valuable waterpower thus to be introduced into the heart of the town. These judicious improvements ordered at the last regular session of the legislature cannot fail to advance the prosperity of Ottawa to a high degree.”<sup>2</sup>

An even larger hydraulic basin was constructed at Lockport, which was also designated as the headquarters for the canal. Between that site and Joliet was the largest land surface decline on the line of the canal, some forty feet in five miles. The I and M Canal was, alone of all the canals built in the 19<sup>th</sup> century, to concentrate on waterpower production. Although the fall between Lake Michigan and the terminus of the canal, 100 miles southwest, was slight – 140 feet, the presumption of unlimited water from Lake Michigan seemed to promise unlimited power. The idea that the Canal Commission should devote its resources to producing water power was not without opposition, but as Commissioner Thornton said in his annual report of 1840:

“It is the interest of a large number of citizens, who have settled or intend to settle on the line of the canal, to have the land and waterpower sold early and at low prices; a strong disposition has been constantly manifested by a few to throw obstacles in the way of building up State towns, and creating manufacturing power which they view and denounce as an opposition to individual enterprise. But the true policy of the State, like that of her citizens, is to sell her property to the best advantage, and where she has improved it, to claim the benefits of improvement without regard to selfish complaint.”<sup>3</sup>

In an effort to lure settlers and lure economic enterprise to the towns along the canal, hydraulic power sites were established at Lockport, Joliet, Channahon, Aux Sable and Ottawa.

In addition to drawing settlers to the area because of the canal's economic importance, the project also drew immigrants because of the prospects of work on the canal. In 1838 the Chief Engineer, William Gooding, reported that there were 2114 workers on the canal, exclusive of contractors. This was at a time when Chicago's population was about 4000.<sup>4</sup> These canal workers did not necessarily stay after the canal was completed, but they certainly added to the economic base of what was certainly a frontier territory.

When the I and M Canal was completed in 1848, a number of towns were well established along its route. Two of these towns, Lockport and La Salle, were established by the Canal Commissioners, and though they never flourished to the extent the Canal Commissioners hoped, they did grow and persisted.

The 1850s was the beginning of the railroad era in Illinois, and one of them, the Rock Island, fought successfully to serve the string of towns from Joliet west along the canal. From 1859 to 1860 the Chicago and Alton built its tracks along the canal from Joliet to Chicago. These two railroads were built to specifically take advantage of the economic base the canal had developed.

When the canal opened for travel in April of 1848, its depth was insufficient for carrying a full load. The first boat to traverse the route carried a cargo of sugar from New Orleans and a few passengers. It was the passenger business that constituted the largest cargo in the early years of the canal. When the Rock Island was completed between Chicago and Rock Island in 1854, the passenger and fast freight business on the

canal was destroyed. On the canal, these packets could only go about six miles an hour, and it took about 24 hours to go from Chicago to La Salle. The boats were towed by mules or horses on the towpath along the canal.

However, the heavy freight business continued, and it was increasingly important to Northern Illinois. Before the canal was completed, most of the Illinois River trade went through St. Louis. After 1848, it shifted to the canal and Chicago. After 1848, the freight rates were lower to the Eastern cities through Chicago and across the lakes to Buffalo, and then on the Erie Canal; or by St. Louis to the New Orleans route, and then by sea to the East. Between 1848 and 1853 shipments of corn on the canal increased four times, sugar shipments doubled, and lumber shipments increased nearly four times from 15 million lumber feet in 1848 to 58.8 million feet in 1853. This increased traffic on the canal and on the Illinois River caused an economic boom in river cities such as Peoria, where construction and other economic activity increased considerably after the canal was completed.<sup>6</sup>

Obviously, as railroads were built, they represented a serious challenge to the canal. Not only did they seek to compete in the canal corridor by building their tracks on the canal right-of-way, but they could provide transportation year round, while the canal had to be closed during the winter months. Despite this, in 1866-1867 the canal carried over twice as much corn to Chicago as the Rock Island Railroad despite the latter's greater area of service which extended well into Iowa. In 1873-1874, the canal carried considerably more corn into Chicago than did the Rock Island.<sup>7</sup> The freight carried on the canal peaked in 1882 at 1,011,287 tons. This began dropping sharply after that year, and by 1916, commercial traffic had practically ceased on the canal. This dramatic drop was brought on by a number of factors. First of all, the railroads developed a system of pro-rating that made it more expensive for shippers to transfer cargoes from canal boats to railroad cars than to ship freight straight through on the railroads. Also, the Illinois Constitution of 1870 forbade the allocation of money from the General Fund to make improvements or repairs on the canal. As a result, there was a steady deterioration of the canal and its structures as the tolls could not pay for the needed repairs. By 1914 the depth in the navigable portion of the canal was only four feet, instead of the designed six-foot depth. This severely limited the cargoes that could be carried by canal boats and would destroy commercial traffic on the canal entirely. Compared to the speed of the packet boats which ran at six miles an hour, the freights were slower, as one investigator reported in 1881:

“\$6.00 a day will pay Captain, Wheelman, and Cook (Female). It will also pay board of crew and driver. If desirable to retain the Captain when not running, \$2.00 will suffice, the crew being discharged.

“The best method of transportation is by mules. The cost per trip from Chicago to La Salle, including pay for the driver being \$35.00 each way. The time from Chicago to La Salle is about three days of 24 hours each. The return trip is much quicker being light.”<sup>8</sup>

The boat traffic spurred boat building enterprises along the canal that were most active in the 1850s and persisted until 1906.

Of the local businesses using the canal and situated directly on its banks, the most prominent was undoubtedly grain processing and the grain trade. In every town on the line of the canal there were one or more grain elevators. Very few of these still survive – one important one is in Seneca. However, in the 19<sup>th</sup> century there was much activity along the canal. In Lockport, for example, in 1870 George Gaylord's elevator was handling 200,000 bushels a year. Also, in Lockport, George B. Martin's grain warehouse and elevator was handling 500,000 bushels a year in 1870 according to a local newspaper.<sup>9</sup> The largest such operation in Lockport, and probably on the canal, was the Hiram Norton operation, which consisted of a

grain warehouse, a flouring mill run by hydraulic power off the canal, a saw mill which subsequently became a paper board factory, a cooper shop that produced barrels for shipping the flour, and ten canal boats.<sup>10</sup> Besides flour, another grain processing operation on the canal was distilling. Distilleries were located in towns such as Lockport and rural settlements such as Aux Sable. In order to transport grain, special boats called 'grain boats' were used.

An important industry, particularly between Joliet and Chicago, was the stone quarrying and cut stone industry. The quarries were located on the canal near Joliet, Lockport, and particularly Lemont, because of the ease of shipment on specially designed canal boats called 'stone boats.' Even when most of the commercial traffic had disappeared by 1905, the Western Stone Company still operated the old boatyard in Lockport for the repair of its boats. The stone industry along the canal in the 19<sup>th</sup> century represented one of the biggest concentrations of that industry in the nation.<sup>11</sup>

Another extractive industry using the canal in Grundy and La Salle Counties was the coal industry, and coal mines were located right on the banks of the canal.<sup>12</sup> In addition to coal there were cement mines, particularly around Utica in La Salle County. For example, the Black Ball mines were located near Utica on the canal near Lock 13.

There were also several retail outlets on the canal, stores such as George Gaylord's and Norton's in Lockport. There were a number of lumberyards even after the arrival of the railroads. And finally, as commercial traffic and revenue were declining for the canal in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, one new industry appeared as industries ceased using the canal's hydraulic power; commercial electric companies became a new source of revenue. From 1910 to 1917, the returns from water power leases to such companies as the Economy Light and Power Company of Joliet and the Northern Illinois Light and Traction Company of Ottawa, were the only sources of revenue for the canal that were increasing.<sup>13</sup>

Finally, it should be noted that ever since 1984 when Federal legislation was passed creating the Illinois and Michigan Canal National Heritage Corridor, a new source of income from the canal has been gaining, namely tourism and tourism-related activities.

The great interest in canal construction peaked in the 1840s, then declined in the face of the railroad enthusiasm. However, beginning in the 1890s, interests in canals and inland waterways suddenly revived across the nation. In Northern Illinois, this canal revival resulted in the construction of two canals, namely the Chicago Ship and Sanitary Canal and the Illinois and Mississippi Canal, more commonly known as the Hennepin Canal.

The Chicago Ship and Sanitary Canal was the largest canal built in the 19<sup>th</sup> century, surpassing the Suez Canal. It permanently reversed the flow of the Chicago River by pulling large quantities of water from Lake Michigan, thereby protecting Chicago's source of drinking water (Lake Michigan) from pollution and flushing Chicago's sewage downstate to be purified by dilution. The canal was built to the depth of 24 feet, while the Illinois and Michigan Canal was six feet in depth. This depth meant that the bottom of the Sanitary canal is at the same elevation as the bottom of the Niagara River above the falls.

The canal was 160 feet at its narrowest, over 200 feet at its widest. The Illinois and Michigan was 60 feet wide at its narrowest. Despite the title, the Ship and Sanitary Canal was not originally designed for navigation, as it began in Chicago and ran thirty miles to Lockport, where its ample flowage ran over a variable level dam, called Bear Trap Dam, into the Des Plaines River.

When construction began 1892, it had an immediate impact on the area because of the large number of Black workers and immigrants that came to work on the project. The Sanitary District of Chicago purchased

ample land on either side of the canal so that in the future it could be leased out to manufacturers or other commercial users.<sup>14</sup> The economic possibilities increased after 1906 when the canal was extended a mile-and-a-half. A lock built into the Des Plaines River made the canal navigable, and its new terminus had a large hydroelectric plant that was built so that if the flow from Lake Michigan increased, its generating capacity would be able to increase.

Shortly after this, Texas Co. built a refinery on this canal at Lockport, using both the canal and adjoining railroad for shipments. Material Service, after World War I, built docks near Lockport for the shipment of crushed rock and sand, principally to Chicago. In the next 20 years a number of facilities for transportation were built along this waterway. In 1933 a series of locks and dams were built on the Des Plaines and Illinois rivers so to make it navigable to a depth of 12 feet to Grafton and the Mississippi. This further spurred economic development on both the Sanitary Canal and along the new Illinois Waterway.

The other canal in Northern Illinois built after 1890 was the Hennepin Canal to connect the Illinois River at Hennepin to the Mississippi River at Rock Island. This canal was proposed in 1832, and the first survey was made in 1866. But it was not until 1890 after Congress appropriated \$7 million for the project, that construction was begun. This canal was constructed by the U.S. Army Corps of Engineers. In 1890 it was under the direction of Major W. J. Marshall, who designed many of its unique concrete locks. It was completed in 1908 and continued to be operated by the Army Corps of Engineers until they turned it over to the Illinois Department of Conservation. In 1951 it was closed to commercial traffic, and from 1960 to 1970 the Army Corps worked with the State so that in 1970 it could turn the waterway over to the Department of Conservation for recreational use. The purpose of this canal was to connect the Illinois to the Upper Mississippi. The Iowa legislators anxious for an alternate route for that state's grain to Chicago, had urged its construction in the 1860s and 1870s. However, after it was completed, it had little economic impact on the area it crossed. Although there was some commercial traffic carrying farm products and industrial parts, it was never an important commercial waterway.<sup>15</sup>

## FOOTNOTES

1. "Account of Sales of Lots in the Town of Chicago, Sold by William Montgomery, Auctioneer in the Month of June 1836." Lewis University Canal Archives.

The highest amount bid for a lot was \$21,000. While it's true that four years later the purchasers were complaining that they couldn't continue to make payments and petitioned for a moratorium (see "Petition of Diverse Citizens of Chicago Concerning Lots in Said Town, Nov. 13, 1840" Mss Lewis University Canal Archives) there can be no doubt the impetus the canal gave to land speculation and immigration.

2. "Message to Governor transmitting the Report of the Board of Commissioners of the Illinois and Michigan Canal to the Legislature of Illinois, December 31, 1838" Springfield, Ill., 1839, p. 12.
3. Report of the Canal Commissioners of Illinois to Governor John Tanner Dec. 1, 1900; "Annual Report of 1840 by W. F. Thornton," Springfield, 1901, p. 188.
4. Op. cit., "Message to the Governor.... Most of these were Irish immigrants. Their numbers varied from year to year, but reached a peak in 1847. For a more complete examination of the Irish workers on the Canal, see Tobin, Catherine T., The Lowly Muscular Diggers: Irish Canal Workers in Nineteenth Century America, Ph.D. Dissertation, Notre Dame, 1987, p. 24.

5. Putnam, James W., The Illinois and Michigan Canal, A Study in Economic History, University of Chicago Press, 1918, p. 102.
6. Ibid., p. 104-105.
7. In 1866-67, the Canal carried 9,575,569 bushels of corn compared to 4,279,190 by the Rock Island. In 1873-74, 12,722,569 bushels were carried on the Canal compared to 8,547,187 on the Rock Island.
8. Letter from C. E. Bayley to Major G. J. Lydecker, Chicago, April 9, 1881. "Letters received by Chicago District Engineer Office various projects 1881-1882." In the U.S. Archives Midwest Branch, Chicago.
9. Hellenger, Richard, Historic American Engineering Record, Lockport Historic District IL 16, Mss 1979 Submitted as part of the Lockport Heritage Conservation and Research Project, 1979. Mss Lewis University Canal Archives.
10. U.S. Census, Industrial Schedule Will County, Illinois. Lockport Township, 1860.
11. Michael, Vincent and Slator, Deborah, Eds., Joliet-Lemont Limestone, Landmarks Preservation Council of Illinois, Chicago, 1988, p. 3.
12. Vierling, Phillip E., Hiking the Illinois and Michigan Canal and Exploring its Environs, Vol., I, La Salle to the Fox River; Illinois Country Outdoor Guides, Chicago, 1986, pp. 54 & 153.
13. Op. cit., Putnam, Ill. and Mich. Canal, pp. 84-85.
14. Report Upon the Chicago Drainage Canal, by the International Waterways Commission, Government Printing Office, Washington, D.C., 1907, p. 6.
15. See Griffen, D. W. and Newton, G. A., History of the Hennepin Canal, Western Illinois University, 1984; also, Yeater, Mary, The Hennepin Canal, American Canal Society, York, Penn., 1978.