WETLAND MATTERS

NEWSLETTER OF THE WETLANDS INITIATIVE

SEPTEMBER 2000 VOLUME 5, NUMBER 2

CHICAGO RIVER REVERSAL SOLVES PUBLIC HEALTH CRISIS

BY RICHARD LANYON

From the 1830s to the end of the 19th Century, the rapidly growing city of Chicago was plagued with frequent epidemics of waterborne diseases. The city's death rate was one of the highest in the world. Despite the widespread installation and use of sewers beginning in 1855, the problem did not abate. In fact, the sewers, while providing adequate local drainage, only moved the public health hazard to the river and, inevitably, to Lake Michigan.

The lake also supplied the city with its drinking water, thus creating a vicious cycle. Successive efforts were undertaken to move the water intakes farther from shore. But, in time, the plume of pollution would reach farther out into the lake, enveloping the intakes. At this time, acceptable technology for the treatment of large quantities of potable water or sewage was nonexistent.

By the 1880s, it became clear that the only viable solution was to discharge the sewage into the Des Plaines River—and on to the Illinois River—via a channel from Chicago to Joliet. A sanitary district was created, charged with the job of building the channel, and began work. When its work was finished more than a decade later, this remarkable feat caused excavation of 42,230,000 cubic yards of rock and soil and construction of 460,000 cubic yards of masonry for channel walls and bridge abutments. The total cost was $33.5 million. Today, the 28-mile constructed channel is called the Chicago Sanitary and Ship Canal, although to its builders, it was referred to as the Main Channel.

FIRST REVERSAL OF THE RIVER

In 1848, the Illinois and Michigan (I&M) Canal was opened to navigation, connecting Lake Michigan to the Illinois River through the Chicago River over the former Chicago Portage and down the Des Plaines River. This allowed a small amount of the polluted Chicago River water to flow away from the lake and down the canal. However, in wet years the capacity of the I&M Canal was insufficient to remove all pollution. A deepening project in 1866 and construction of a pumping station at the South Branch in 1871 provided only marginal improvement during dry years. It remained insufficient during wet years and storms.

Meanwhile, the Des Plaines River frequently went out of its banks near Summit and discharged part of its excess toward Chicago. The Ogden-Wentworth Ditch was constructed about 1870 to provide drainage for land speculation. This ditch, connected on the east to the West Fork and on the west to the Des Plaines River, provided drainage

in both directions. However, it also abetted the overflow of Des Plaines River floodwater toward Chicago. It was agreed by most that the only way to handle excess Des Plaines River floodwater—and to provide for positive reversal of the Chicago River when the lake level was low—was construction of a much larger and much deeper channel than the I&M Canal.

Citizens' Association

While technology would be needed to provide a proper solution to gaining clean water for Chicago, it would take social action to prod the policymakers and the citizens to implement that solution. In 1880, the Citizens' Association took upon itself the task of investigating alternative remedies and broadcasting these to residents and policymakers. Mother Nature helped their effort on August 2, 1885, by demonstrating the need for action. A large storm over the area once again caused the Des Plaines River to go out of its banks near Summit and send a torrent of water eastward along the Ogden-Wentworth Ditch to the West Fork of the South Branch. The flood wave went down the fork and branch and out the Chicago River into Lake Michigan, causing extensive damage to boats, docks, and bridges. Fortunately, the storm brought a cool front and on-shore winds. The flood wave purged the river of offensive deposits, the on-shore winds kept the plume of pollution away from the water intakes, and the cool weather subdued the stench of the river. Were conditions otherwise, a greater catastrophe might have ensued.

Later that month, the Citizens' Association issued a report authored by, among others, Lyman E. Cooley, who would later be instrumental in the construction of the channel. The report proposed a "New River" of larger capacity than the I&M Canal to carry Chicago's wastes away from Lake Michigan.

Commission Formed

The City of Chicago Common Council responded in January 1886 by taking its first official action to solve the problem of the Chicago River: it formed the Commission on Drainage and Water Supply. The commission was charged with the task of outlining a solution to the problem within one year, in time for legislative action by the Illinois General Assembly. Mayor Carter H. Harrison appointed Rudolph Hering of Philadelphia as chief engineer and Benezette Williams and Samuel G. Artingstall, City Engineer, as consulting engineers to the commission. The latter two would later be involved in the engineering design of the channels to reverse the river.

The commission issued its 36-page preliminary report in January 1887 which outlined three alternatives for sewage disposal: 1) discharge sewage into Lake Michigan, 2) dispose of sewage on land, and 3) discharge sewage into the Des Plaines River.

Discharge to the lake would involve large conveyance systems to bring freshwater from north of Evanston into the city and to convey waste to the lake to the south in the Calumet region. Dispersion of the waste in the lake and removal by the prevailing currents were believed to be sufficient, yet waste treatment was considered an eventuality and judgment was reserved on the long-term impact on the lake. Disposal on land was only considered briefly. Although this method appeared to be working satisfactorily in the Pullman area, the size and scale of such an operation for a large city would be cost prohibitive. Discharge to the Des Plaines River needed little explanation due to the extent of existing studies and plans.

Cost estimates were based on a projected population of 2.5 million, roughly three times the then current population. Discharge to the lake was estimated at $37 million, disposal on land at $58 million, and dis-

charge to the Des Plaines River at $28 million. Discharge to the Des Plaines River was the obvious recommended solution.

Included in the report was extensive consideration of the water supply for the city. At the time, the city was at its limit of capacity to deliver potable water and a new water tunnel was under construction. First, the commission studied the existing distribution system and recommended improvements to increase the efficiency of delivery. Next, they recommended additional intakes along the lake front and pumping stations throughout the city to reduce pumping cost and equalize pressure in the distribution system. Finally, they recommended that the city should plan for its water system on the basis of 150 gallons per day per capita.

The report concluded with suggestions for a single management authority for the drainage systems and another for water supply. Also identified were the two drainage systems: one north of 87th Street with its outlet at Summit on the Des Plaines River, and the other south of 87th Street with its outlet at Sag, also on the Des Plaines River.

In bringing the report to the City Council, Mayor Harrison called for legislation to create a new metropolitan district to fund and prosecute the work. He suggested that it be under the direction of one able, paid head, perhaps appointed by the governor, rather than a body of commissioners.

Plans for a 2nd Reversal

The Commission on Drainage and Water Supply set the parameters for design of a large channel from Chicago to Joliet, using as input much of the previous plans as well as their own creative ideas and results of their exhaustive investigations. Determining adequate capacity was based on meeting three fundamental needs of the city and region: storm flow, sanitation, and navigation. The commission recommended a channel size of 3,600 sq ft in area and a velocity of 3 feet per second, which was rounded to 600,000 cubic feet per minute to serve a population of 2.5 million people.

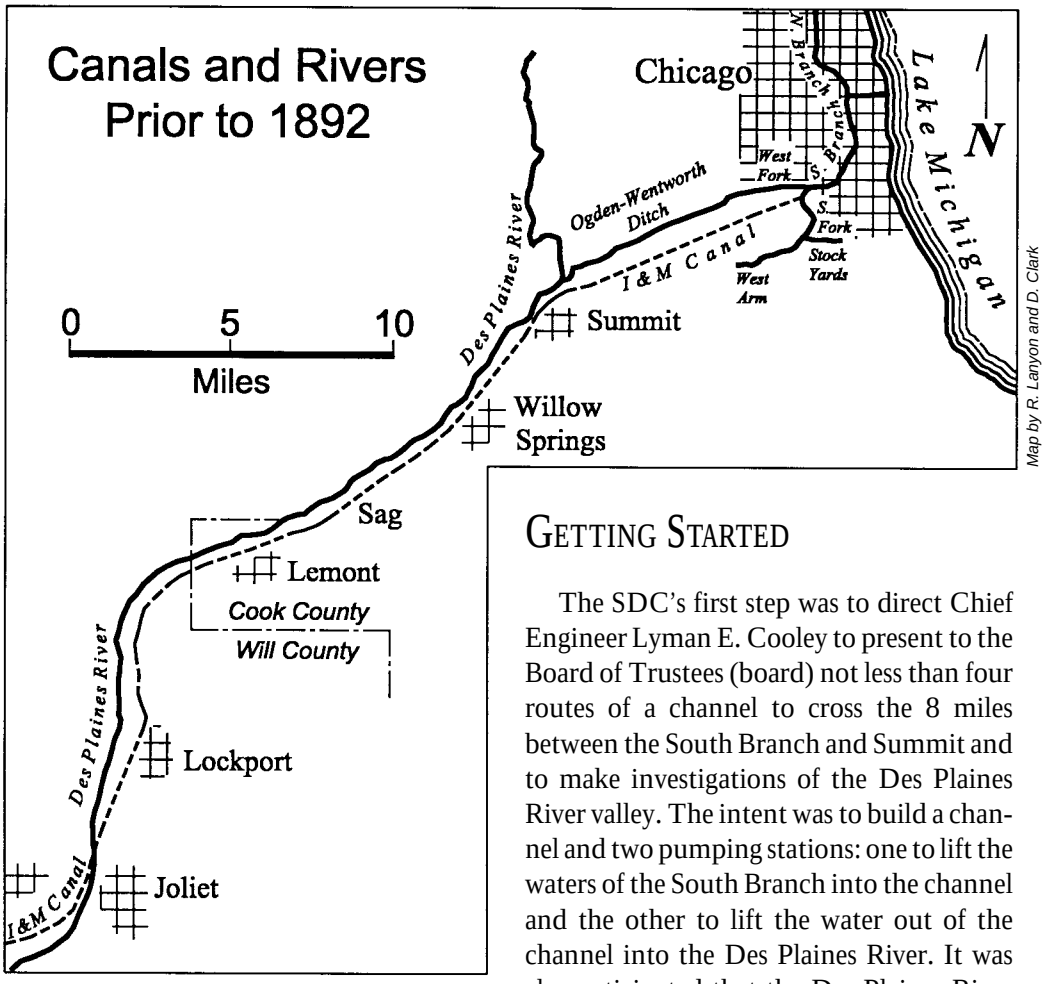
The report proposed a "New River" of larger capacity than the I&M Canal to carry Chicago's wastes away from Lake Michigan.

It was the commission's opinion that the channel capacity would prevent backflows into the lake and that water intake cribs located two miles offshore would yield abundant quantities of pure drinking water.

The commission estimated the cost to build the channel at $20.3 to $24.5 million. It also recognized the potential for energy recovery through water power development in the water flowing down the steep descent of the Des Plaines River.

Legislative Solution

The scope of the recommendations and the size of the undertaking required the state legislature to authorize the formation of a new unit of local government. Chicago was in debt to the legal limit and the task at hand would require considerable financial resources. A new entity encompassing a larger area could borrow anew, could have a larger tax base than the city, and would have powers beyond the city limit.



Map by R. Lanyon and D. Clark

A legislative commission began work in May 1887, writing what would become the Roche Bill (effective July 1, 1889): "An act to create sanitary districts and to remove obstructions in the Des Plaines and Illinois rivers." Typical of Chicago's political muscle, within six months the proponents had established the boundaries of the new Sanitary District of Chicago (SDC), conducted a referendum which passed by a whopping 70,958 to 242, elected nine trustees and had them sworn in and the SDC organized. The new entity had to wait out two legal challenges which went up to the Illinois Supreme Court and, by June 1890, affirmed the authority of the SDC. Now the SDC could borrow money, approve a tax levy, and begin work.

Getting Started

The SDC's first step was to direct Chief Engineer Lyman E. Cooley to present to the Board of Trustees (board) not less than four routes of a channel to cross the 8 miles between the South Branch and Summit and to make investigations of the Des Plaines River valley. The intent was to build a channel and two pumping stations: one to lift the waters of the South Branch into the channel and the other to lift the water out of the channel into the Des Plaines River. It was also anticipated that the Des Plaines River would have to be enlarged to accept the additional flow.

A majority of the board during the first two years consistently sought a minimal approach, something which seemed less expensive and time consuming than a channel all the way to Joliet. There was divided opinion in spite of specific criteria in the act and the 1887 recommendations of the Commission on Drainage and Water Supply. The board even considered not building a new channel but using instead the I&M Canal—an idea which the commission had suggested as an interim project. Cooley became a scapegoat for the lack of progress and was discharged in December 1890. Finding and keeping a chief engineer would prove to be a challenge.

General John Newton was retained as a consulting engineer to the board and a new chief engineer, William Worthen, was appointed. Newton, Worthen, and the board began to focus on the cost of works to accomplish the purpose of the act. The cost of a channel from Summit to Joliet and the deepening of the existing canal in the city was estimated and reported in March 1891 at $25.9 million. This was more than the approximate $15 million that could be raised through taxes and the sale of bonds. Moreover, the majority of the cost and construction time would be consumed by the need of a large channel cut through rock to meet the requirements of the act. The channel above Summit—to be excavated in soil—would be easier by comparison.

Newton and Worthen did not last long and two more chief engineers, Samuel Artingstall and Benezette Williams, came and went in succession in the next two years. The board engaged in controversies over the route between the South Branch and Summit and between Lockport and Joliet and over the method of construction: either in the wet by dredging or by excavation in the dry. The press and the public expressed anger at the lack of progress. The board attempted to show some good deeds by proposing measures for interim relief of the Chicago River, but these were challenged and caused further strife among board members. Some board members were beginning to miss meetings and a few meetings were canceled for lack of a quorum.

Artingstall had greater experience with canal construction methods and costs and reviewed the Newton-Worthen report and the March 1891 estimate. He also benefitted from his previous experience with the commission. Artingstall submitted a report to the board in June 1891 proposing a least cost route (with minimized rock excavation) from Summit to Joliet, estimated at $14.5 million, reducing the previous estimate by $8.2 million. He recommended that work proceed initially on the rock section from Sag to Lockport, since this would be the most expensive, difficult, and time consuming part of the channel construction. The report was referred to committee.

By October 1891, there were only six board members as three had resigned during the previous summer. The November general election filled the board with Boldenweck, Eckhart, and Cooley (yes, none other than Lyman E. Cooley, the SDC comeback kid). Eckhart had been on of the legislative commission in 1887 to write the Roche Bill. All three had the same perspective of the mission before the SDC. When the board elected new officers, the new president, Frank Wenter, designated Cooley as chairman of the Engineering Committee. (Wenter was one of the "nay" votes on the termination of Cooley as chief engineer one year earlier.) These two would prove to be a dynamic duo in revitalizing the work of the board.

Cooley's first move was to make a comprehensive review of the planning accomplished to date. The Engineering Committee invited input from the public, other governments, and practicing engineers. With this backing, the committee recommended a program of reforms which included:

1. Reconsider the route from Sag to Lockport and prepare plans for construction in the dry by March; purchase land and begin construction by June.

2. Reconsider the route from Willow Springs to Sag as above, planning to begin construction by September.

3. Reconsider the route from the South Branch to Willow Springs based on the need for adequate capacity and future expansion and plan to begin construction in 1893.

4. Reconsider the route from Lockport to Joliet based on the need for adequate capacity through Joliet, the economy of water power development, the need for navigation

and the possibility of federal cooperation. Construction need not begin until 1895.

5. Fix the minimum size of the Chicago River so that improvements thereto will conform to a general plan.

The board adopted the recommendations in January 1892. June 1893 saw the appointment of Isham Randolph as Chief Engineer and this finally brought stability to the Engineering Department as he remained in this position to 1907.

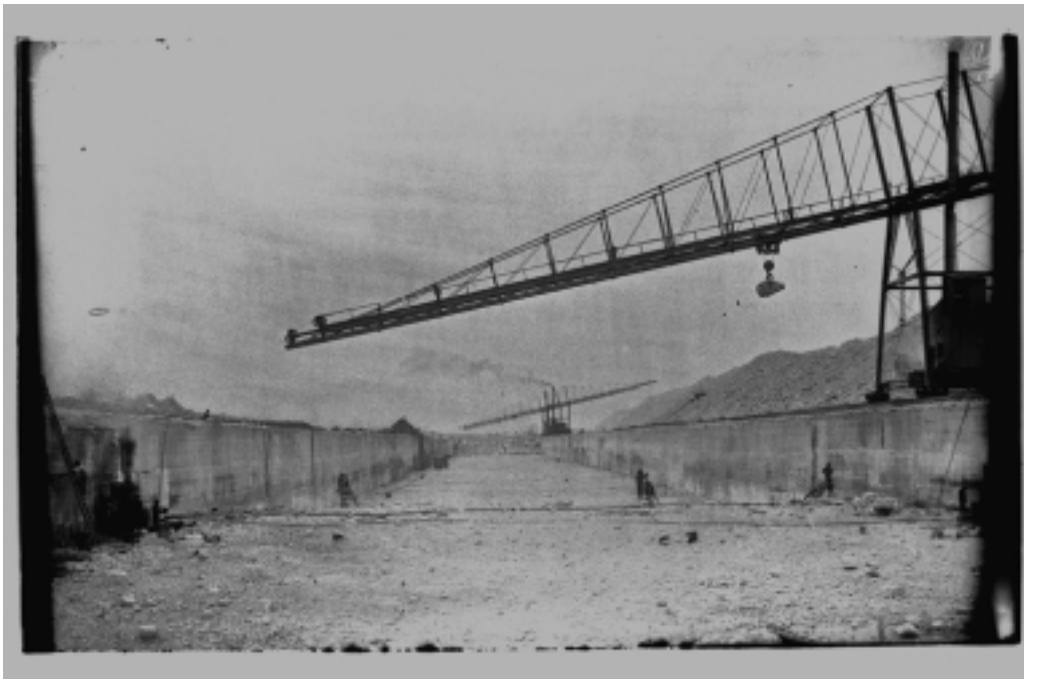
The Main Channel

In the spring of 1892, the board focused on getting the 14.8-mile rock section of the Main Channel designed and under construction, knowing that excavation in rock would be more difficult and time consuming than excavation in earth.

The rock section began at Willow Springs Road—not Sag as was originally thought—and ended at Lockport. New surveys and subsurface investigations were constantly revising knowledge of the route. The channel route was west of the I&M Canal and east of the Des Plaines River. Niagaran dolomite was very close to or at the surface of the bed of the Des Plaines River throughout much of the reach from above Lemont to Lockport. From Willow Springs to above Lemont, the rock surface was high enough that a channel width of not less than 160 feet, a channel depth of not less than 18 feet and a discharge capacity of 10,000 cubic feet per second (cfs) was required by the act.

In June, 14 contracts were awarded and work began on September 3, 1892, with a ceremony at the Cook-Will County Line. Some of the rock excavation contractors proceeded apace and their work was completed by 1895, one year earlier than anticipated. Other contractors were plagued with various problems and the work was not completed until 1899.

Next to go under contract was the 6.2-mile



Bedrock limestone is loosened by drilling and blasting in the Main Channel near Lemont in 1894. Loose rock is removed from the channel excavation by cantilever inclines to the spoil piles on the right. (Photo courtesy of Metropolitan Water Reclamation District of Greater Chicago)

earth and rock section which extends from Willow Springs to Summit and again follows the route of the I&M Canal and Des Plaines River. At Summit, the route of the Des Plaines River turns north, separating from the routes of the Main Channel and I&M Canal, which turn toward Chicago's downtown.

Six contracts were awarded in January 1893 for channel excavation and all work was completed by 1899. The channel was trapezoidal in cross-section with a bottom width of 210 feet and side slopes of 2 horizontal to 1 vertical. To make room for the Main Channel, the eastward meanders of the Des Plaines River would have to be relocated, thus several miles of a river diversion channel were constructed, as well as a continuous levee separating the Main Channel and river.

The earth section of the Main Channel extended from Summit to the West Fork just west of Robey Street (now Damen Avenue) in Chicago. This reach was notable because of the many railroad crossings. As a result of negotiations with railroads for one of the crossings, the SDC was obligated to also construct the Collateral Channel connecting the Main Channel to the West Fork along the alignment of what is now Albany Avenue. This lesser capacity channel had a bottom width of 110 feet.

The 7.2 mile reach was divided into eight contracts, the first six of which were awarded in December 1893. The last two contracts, awarded in May 1894, provided for dredging and then transporting the spoil by scow to the lakefront to be used as fill for the creation of what is now Grant Park. Other spoil was deposited in what is now Douglas Park and used as fill for local streets and boulevards. Due to the delayed construction of a major railroad crossing, dredged channels extended from the West Fork to Western Avenue along the route of the Main Channel and to the Main Channel north embankment along the Collateral Channel. Work on these eight contracts was completed in either 1898 or in 1899.

To control the discharge of water from the Main Channel, two more contracts were awarded in 1895 and 1896 for construction of the Lockport Controlling Works. These consisted of seven vertical gates, each 30 feet wide and 20 feet high, and a 160-foot long sector-type dam, called the Bear Trap Dam. The dam could be lowered to allow flow over its top, providing for sensitive discharge control. The gates were raised to provide for rapid increases in discharge over a short time period. These two types of control were necessary because the end of the Main Channel was 35 miles from Lake Michigan and the lake level could change rapidly on short notice. These control structures were among the largest in the world at the time, comparable to controls on the outlet of Lake Superior and on the Ohio River.

The Joliet Project

Near Lockport, the Des Plaines River began a relatively steep descent to Joliet, at some places flowing over exposed dolomite. Once in Joliet, the river was joined by the I&M Canal where there were dams to create navigation pools. Planning for a channel through Joliet would require more study and dealing with the I&M Canal Commissioners and the City of Joliet. Complicating the matter was the physical setting north of Joliet. The river channel meandered from east to west across the valley floor; the I&M Canal and two railroads were on the east side of the valley, and several industries which included water power developments were along the river.

The confluence of the I&M Canal required modifications to the tow path, locks, and dams, but the canal commissioners were slow to come to terms with the SDC. The SDC proceeded with work and was sued by the canal commissioners. Three contracts were awarded in early 1898 for the 5.1 miles

of work. Due to the lawsuit and other contract problems, the work was not completed until 1901. However, enlargement of the channel capacity was completed by late 1899.

South Branch Improvements

By August 1895, 28 miles of the Main Channel were under contract, and rock excavation was nearly complete near Lemont. The board needed to improve the capacity of the Chicago River and the South Branch so that it would be able to deliver the flow of water from Lake Michigan as required by the act. The river had many bends and constrictive bridge openings, was shallow in spots, and was always busy with boat traffic. Fortunately, no time would be consumed in debate over the route.

The U.S. Army Corps of Engineers (Corps) had plans to improve the Chicago River, so the SDC concerned itself with improvement of the 5 mile reach of the South Branch between Lake and Robey streets. All work in the South Branch was subject to permits issued by the Corps, but the SDC would often begin work before a permit was issued. One contract was awarded in May 1897 for removal and replacement of dock walls and dredging to pass 5,000 cfs in a channel 200 feet wide and 20 feet deep. Other contracts were awarded in 1898 for replacement of two center pier bridges with restrictive openings and a large bypass conduit around a restrictive bridge opening that could not be widened. All work was sufficiently completed by 1899 to provide for the design capacity.

Bridges

The act made reference in many locations to a navigable waterway, maximum velocities, and minimum depths and widths— all of which defined the conditions for safe commercial navigation. However, the act made no reference to bridges. Lacking statutory definition left the matter of bridges discretionary to the SDC and its board. This caused much debate and division among the members of the board.

The bridges were put under contract late in the 1890s and all substructure work was completed by late 1899 before the Main Channel was placed in service in January 1900. The SDC built or funded the construction of 31 bridges to effect the reversal of the Chicago River. The 13 bridges over the Main Channel were made movable to allow for passage of boats. All roadway bridges have since been replaced. All but one of the railroad bridges remain in service today, although none can be opened.

Ancillary Issues

To build the Main Channel, the board had to address more than just design and construction issues. The SDC took on other issues and dealt with them effectively so that the work to reverse the flow of the Chicago River was not impeded.

For example, the board faced many issues relating to the health and welfare of the laborers. Due to the remote location of the work, each contractor had to provide housing and meals for workers. The SDC sanitary inspector, who also was an officer of the State Board of Health, established and strictly enforced occupancy and sanitation rules for contractors. The SDC employed its own police force to keep order along the channel route and between the construction camps.

Contractors could not be forced to hire union labor, but such was encouraged. The board supported union issues, such as adherence to the eight-hour workday, payment of wages in cash twice a month, and a guaranteed minimum wage. Relief for the unemployed was given by use of day labor authorized, supervised and compensated through contract extras. By September 1894, 29 contracts had been awarded and the

maximum number of workers employed by the contractors was reported as 5,728 in October 1894.

The board faced other issues as well, not the least of which was how to adequately fund the total project. The SDC sought and received funds through a special taxing authority from the Illinois General Assembly.

The determined pace of construction often caused problems with railroads and other public agencies. Most issues were resolved by active involvement of board members and staff. When legal remedy was needed, the SDC legal staff was particularly aggressive and the courts favorable to the SDC carrying out its authority.

In the late 1890s, other Great Lake states began to object to the intended diversion of lake water, but took no action until the 1920s. Missouri objected to the discharge of Chicago sewage and initiated litigation late in 1899, but the Main Channel was placed in operation and no injunctions were issued. The SDC hired panels of noted experts to refute these claims of adverse impacts. Downstream interests who may have been concerned about the discharge of sewage were mollified by the promise of a large capacity navigable waterway linking the Great Lakes with the Gulf of Mexico.

Final Steps

By the summer of 1898 construction of the Main Channel and improvements to the Chicago and Des Plaines rivers were well underway and some parts were completed. The board was eager to finish the work and admit water to the channel, allowing the river to be reversed. However, the act required that the Illinois governor give his

With the Chicago River reversed, a flow of 4,250 cubic feet per second flows over the submerged Bear Trap Dam at Lockport in May 1900. The completion of the decade-long project to construct the Main Channel provided water treatment by dilution for nearly 1.3 million Chicagoans. (Photo courtesy of Metropolitan Water Reclamation District of Greater Chicago)

approval to admit water to the channel based on the recommendation of a commission. In addition, the Corps had to issue a permit for connecting the river to the channel. In January 1899, an order was approved and sent off to Governor Tanner requesting the appointment of three commissioners to inspect the work and conveying the willingness of the SDC to reimburse the state for the costs of inspection. The act required that the three person commission be composed of residents of downstate areas, namely Joliet, LaSalle and Peoria. The Governor followed through with the appointments and the SDC deposited $25,000 to be used by the commission.

A preliminary report was submitted by the commission to the SDC in November 1899. However, time was running out for the SDC as pressure was mounting from the public for relief from the hazard of the Chicago River, and a lawsuit was being threatened by Missouri. The sooner the better for water to flow through the channel. Thus, the SDC responded in two days to the commission's report with a firm commitment, which it fulfilled, to complete all unfinished work by the next month.

To place the empty 28-mile long Main Channel into operation, water would need to be added slowly so as not to cause damage by rapidly rising water levels or swift currents. Despite not having specific approval from Governor Tanner, water was let in at the Chicago end beginning on January 2, 1900, through a wooden flume in the earth dike across the south end of the Collateral Channel. The filling continued to January 14 when the water level in the Main Channel reached the water level in the West Fork. The next day, the earth dam across the Main Channel west of Western Avenue was cleared away by dredges and the waters on each side came together. After 13 days of filling, the water level came to rest, to wait for the last remaining deliberations of the commission reporting to the governor. The SDC vowed to wait for Governor Tanner's approval before releasing water from the Main Channel through the Bear Trap Dam.

UNFORESEEN TO THE POLICYMAKERS OF THE PAST, PROTECTING THE HEALTH OF THE CITIZENS OF CHICAGO... AND DEVELOPING A NAVIGABLE LINK TO THE GULF OF MEXICO HAVE HAD ADVERSE, LONG-TERM EFFECTS ON THE ILLINOIS RIVER.

The board and commission members traveled to Lockport on January 17, 1900, to be at the controlling works when the approval came. The governor's approval was received by telegram and the Bear Trap Dam was lowered slightly below the water level to allow a thin sheet of water to flow over its top. After a brief ceremony, the valves controlling the dam were opened and the massive 160-foot long dam disappeared beneath the water. A torrent of water rushed out of the Main Channel over the dam toward the Des Plaines River. On this chilly day in the first month of the new century—more than 10 years after passage of the authorizing act and after more than 7 years of construction—the Main Channel was now in operation to save Chicago from its own waste.

EPILOGUE

For more than 30 years, clear Lake Michigan waters were discharged through a reversed Chicago River, South Branch, and Main Channel. The clarity was acknowledged by downstream communities as far as Peoria. In a 1902 report, city and state scientists declared—with data collected in 1899 through 1901—that all chemical and bacterial effects of Chicago's sewage were assimilated by the time the discharge reached Peoria. The Missouri suit was dismissed for lack of demonstrable harm.

The work of the SDC, however, was not over. In 1907, the Main Channel was extended 4 miles from Lockport to Joliet to provide for hydroelectric power generation and a navigation lock, the highest lift in the world at the time. Navigation could now use the Main Channel between Chicago and Joliet, rather than the I&M Canal. By 1912, further discharge capacity increases were made in the earth section of the Main Channel and the North and South branches of the Chicago River, while the North Shore Channel was constructed. The Calumet-Sag Channel was completed by 1922, providing for the reversal of the Calumet River and a navigable link to Calumet Harbor.

The SDC followed the discharge requirements of the act and defied limits on lake diversion imposed by the Corps. The conflicting issues of Great Lakes water levels, states rights, federal authority, navigation, public health, and sanitation ended up in the lap of the U.S. Supreme Court. Technology increases in sewage treatment were pursued by the SDC and a program of intercepting sewer and sewage treatment plant construction was begun before 1920. The U.S. Supreme Court issued a decree in 1930 which placed the construction program on a court ordered schedule, phasing the completion of work with reductions in the volume of water diverted from Lake Michigan for dilution purposes.

Last, but not least, the promise of a navigable waterway across Illinois connecting the Great Lakes with the Gulf, the promise which enabled the SDC to be created in 1889, eventually became a federal project administered by the Corps. A series of seven lock and dam structures and connecting channels between Lockport and Grafton was completed in the 1930s.

Unforeseen to the policymakers of the past, protecting the health of the citizens of Chicago, saving Lake Michigan from Chicago's waste, and developing a navigable link to the Gulf of Mexico have had adverse, long-term effects on the Illinois River. These effects—coupled with the impacts of structural modifications to the Illinois River and urban and agricultural drainage in the watershed—present a challenge for present and future policymakers. Many improvements can be made and substantial benefits gained if some of the natural functions of the river are restored.

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To see a pictorial history of the Chicago River, visit the new exhibition of sixteen murals in the Riverwalk Gateway on the south bank of the Chicago River under Lake Shore Drive.

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The Wetlands Initiative is a nonprofit corporation dedicated to restoring the wetland resources of the Midwest to reduce flood damages, improve water quality, and increase wildlife habitat and biodiversity. Our mission is to promote restoration in ways that provide environmental and economic benefits to society and the landowner. Through research, education, public policy analysis, and large-scale demonstration projects, TWI aims to restore one million acres by the year 2010. While this number may seem large, it represents only 2 percent of the wetlands lost in the Midwest.

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