

St. Louis vs. Chicago

The Water Battle of 1900-1906

by Loring Bullard

The Lost Panoramas: When Chicago Changed its River and the Land Beyond



A barge passes under a drawbridge on the Chicago River in downtown Chicago in this 1911 photograph.

In the second half of the 19th century, St. Louis and Chicago vied for supremacy, each yearning to become the “megalopolis of the West.” They competed for industries, rail access, population growth and public attention. To the chagrin of St. Louis, Chicago surpassed it in size in the 1870s. Both cities campaigned vigorously to host the Columbian Exposition in 1892, but Chicago won the prize. St. Louis would eventually counter by hosting the 1904 World’s Fair. Shortly prior to that, potentially adding injury to insult, Chicago made a decision that resulted in the first high profile water pollution case to come before the U.S. Supreme Court.

For their public water supplies, both cities tapped the closest large bodies of water – the Mississippi River for St. Louis and Lake Michigan for Chicago. Both cities

installed cutting edge sewage systems in the 1850s, but both discharged untreated sewage into their sources of drinking water, albeit several miles from the intakes.

In 1892, Chicago proceeded with a plan to protect Lake Michigan and reduce the incidence of waterborne diseases such as typhoid fever. It would accomplish this by reversing the flow of the Chicago River, sending the river and its load of raw sewage westward over a low divide toward the Illinois River. The Illinois is a tributary of the Mississippi from which St. Louis drew its drinking water – 387 miles downstream.

The Chicago Drainage Canal, built to accommodate this flow reversal, opened in January 1900. The following April, the State of Missouri, on behalf of St. Louis and other Mississippi River towns, filed a formal complaint with the U.S. Supreme



(Left) The Sanitary and Ship Canal was built to connect the Chicago River – which originally flowed into Lake Michigan – to the Des Plaines River, which then flows into the Illinois River, eventually emptying into the Mississippi. At the time, the Sanitary and Ship Canal was the largest civil engineering project in American history.

(Below) The canal, which is 28 miles long, 202 feet wide and 24 feet deep, connects to the Des Plaines River through a series of locks and dams at Lockport, Ill.

Court, alleging that the diversion of Chicago’s sewage would “poison the water supplies of the inhabitants of Missouri.”

Edward Crow, Missouri’s Attorney General in 1901, put it in blunter terms, asking, “what would be done with a man were he caught scattering death dealing germs along the streets of St. Louis?” He would no doubt be “mobbed with little ceremony and strung up to the first post over which a rope could be thrown.” Chicago’s action, Crow growled, were “none the less criminal.”

Illinois Attorney General Edwin Akin did not initially contest the allegation, but filed a demurrer objection to the bill of complaint, arguing that the matter did not constitute a direct controversy between the two states and therefore did not fall within the jurisdiction of the U.S. Supreme Court. Justice George Shiras handed down the court’s first opinion in January 1901, ruling that his court would indeed hear the case.

“When the health and comfort of the inhabitants of a state are threatened, the state is the proper party to represent and defend them,” Shiras’ opinion stated. It further stated that “contagious and typhoid diseases,” if introduced into Missouri’s river communities, could “spread themselves throughout the territory of the state.” Finally, in a matter of such vital importance – a “situation



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which, if it arose between independent sovereignties, might lead to war” – the authority of the court was “not open to doubt.”

Over the next few years, both sides sent experts into the field to gather information and test theories to bolster their respective cases. This, in fact, would be the first major battle of the technical water experts, with both sides arguing about the longevity of typhoid bacteria and other germs found in river water that attack the intestine. Could they survive the long trip from Chicago to St. Louis?



(Above) The reversal of the Chicago River dumped massive amounts of sewage and industrial pollution into the westward-flowing rivers and actually doubled the size of the Illinois River.

In 1903, the Hon. Frank Bright, special commissioner assigned to hear the case, took a two-week steamboat trip down the Illinois River to gather testimony and to see for himself the effects of the reversed river.

The U.S. Supreme Court heard arguments in the case from 1903 to 1905. John Alvord, a prominent engineer and an expert witness for Missouri, stated his opinion that “in all human probability the rise in typhoid deaths in the city of St. Louis in the last few years has been caused by the added typhoid contamination from the Sanitary District of Chicago.”

James Todd, representing the Sanitary District, pointed out that Alvord’s charts also showed a significant rise in typhoid deaths in St. Louis between 1898 and 1900, *before* the opening of the canal. He suggested the city look for closer sources of contamination, such as sewage from St. Charles, a mere 40 miles above the St. Louis water intake.

In February 1906, the court rendered its final opinion. Justice Oliver Wendell Holmes, authoring the majority decision, marveled at the scientific advances brought to light during the proceedings. He noted that establishing the relevant facts had required the “most ingenious experiments, and for their interpretation, the most subtle speculations of modern science,” although there were “categorical contradictions” between the two sets of experts.

Holmes was reluctant to frame too sweeping an indictment of the discharge of untreated sewage into rivers, something that many large cities still did at the time. A question of the “first magnitude,” he suggested, was whether the “destiny of the great rivers is to be protected against everything which threatens their purity.”

Holmes supported the defendant’s claim that even if some typhoid germs did survive the journey, they would be “scattered and enfeebled and do no harm” by the time they reached St. Louis. Further, he noted that the Illinois River, formerly a “sluggish and ill smelling stream,” had actually been improved by the huge inflow of Lake Michigan water pouring through the canal. Water from the Illinois was now even drunk by fishermen, reportedly “without evil results.”

He also warned Missouri to be careful in pointing fingers. After all, St. Louis and other Missouri cities discharged raw sewage into the Mississippi. If this suit were to succeed, Missouri might “find itself a defendant to a bill by one or more of the states lower down on the Mississippi.”

After learning about new advances in drinking water treatment and filtration, Holmes advised that “the evidence is very strong that it is necessary for St. Louis to take preventive measures, by filtration



DNR photo by Scott Myers

or otherwise, against the dangers of the plaintiff's own creation or from sources other than the Illinois." According to Holmes' reasoning, what "will protect against one will protect against the other." So rather than forcing Chicago to treat its sewage, an expensive and technically challenging proposition, or allowing the wastes to flow back into the city's water supply, Holmes advocated drinking water treatment for downstream users as a more practical solution to the problem.

The Supreme Court dismissed the complaint without prejudice. St. Louis lost

Louis installed any truly advanced sewer filtration plants.

Missouri vs. Illinois established some long-standing precedents, and was mentioned in more than 600 citations in subsequent litigation. But by no means did it signal an end to interstate battles over water pollution. In 1991, Missouri watched with interest as Oklahoma sued Arkansas in federal court, claiming that a wastewater discharge permitted in Arkansas, and meeting that state's requirements, did not adequately protect the scenic Illinois River in Oklahoma, to which more stringent state water quality standards applied.

(Opposite page, bottom) Missouri was concerned that the reversal of the Chicago River and subsequent dumping of Chicago's waste into the Mississippi River would contaminate St. Louis's drinking water. The city's intake was drawn from the river at the Chain of Rocks, only a few miles downstream from the mouth of the Illinois River. The two conspicuous water intakes in mid-river no longer draw water for the expansive, modern-day plant, seen in the distance.



Original postcard in State Historical Society of Missouri Collection

(Left) In 1901, when the Sanitary and Shipping Canal was opened, the Chain of Rocks Water Plant pumped river water through a series of sedimentation basins. It wasn't until 1915 that the city added the Chain of Rocks Filtration Plant, the largest filter plant in the world when it was built. The plant has been continuously upgraded since. This postcard shows the Water Works Plant before it was switched from steam power to electric in 1958.

... a "situation which, if it arose between independent sovereignties, might lead to war."

the case, but eventually heeded Holmes' advice. The city began filtering its public water supply in 1915. Both cities, in fact, addressed drinking water treatment long before cleaning up their own wastewater discharges. By the 1920s, Chicago had constructed three state-of-the-art – at least by the standards of that time – sewage treatment plants.

St. Louis began installing improved wastewater plants after the formation of the Metropolitan St. Louis Sewer District in 1954. It would be the early 1970s before St.

This, and many other cases, demonstrate that there may well be more water conflicts to come – skirmishes for which St. Louis and Chicago prepared the fields of battle at the dawn of the 20th century. ☀

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