Chicago River Flow Reversal

Just north of the town of Lemont, Illinois, the train passes a small lighthouse marking an amazing engineering feat at the intersection of two canals. These two manmade waterways - the Chicago Sanitary & Ship Canal and Cal-Sag Channel - were completed in 1922 to help reverse the flow of the Chicago River, and thereby safeguard a clean water supply for the growing city.

When Chicago was a small trading post, the slow-flowing Chicago River was sufficient to dilute and carry away sewage and other wastes away into Lake Michigan, but as Chicago grew during the late 1800's, the amount of refuse became unhealthy. Increasing quantities of wastes from meat packing plants, factories, households and livestock were discharged into the river. Chicago drew its drinking water supply from intake pipes about 2 miles offshore in Lake Michigan. During heavy rains and floods, pollution was flushed out as far as the clean water intakes, contaminating the drinking water supply. In some years 5% of Chicago's population died of waterborne diseases, and in 1895 an estimated 12% of the city's residents perished because of contaminants in the water. Citizens demanded a solution to the problem.

Engineers in Chicago came up with an amazing plan. Instead of having the Chicago River carry wastes into Lake Michigan, they would reverse the flow of the river. Large quantities of lake water could then dilute the polluted river water and as the water traveled southwest, particles would settle to the river bottom, and through natural processes the water would become relatively clean before it entered the Des Plaines River. A canal called the North Shore Channel was dug, followed by the two channels visible in Lemont. The Sanitary and Ship Canal was cut deep through a low point on the continental divide a few miles west of Chicago, the canals were opened in 1922, and this amazing engineering project was successful in reversing the direction of flow. This feat is thought to be the largest municipal earth-moving project ever completed in the United States.

The assurance of clean drinking water encouraged even more growth in Chicago, which ironically led to greater quantities of pollution dumped into the river. Soon it was not sufficient to simply dilute the polluted river with lake water and depend on natural processes to clean the water. Fortunately technology was advancing rapidly, and modern sewage treatment plants were implemented on a large scale. Today the canals and channels continue to help with pollution control, flood control, and shipping. Since 2005 there has been discussion of again reversing the river's direction, but for now it still flows to the west, away from Lake Michigan.

Source(s):

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