

Red River Floodway protects Winnipeg

Shown here are views of the Red River Floodway, the 29-mile diversion channel, running east around Winnipeg, the capital of Manitoba, Canada. The Floodway (and related structures including Shellmouth Dam, Portage Diversion, Z Dike) kept the 600,000 residents safe during this year's century flood of the Red River of the North. It is popularly known as Duff's Ditch, named after Manitoba Premier Duff Roblin, who pushed it through to completion, in 1968. In 1950, Red River floodwaters devastated Winnipeg; 100,000 people had to flee, and 10,000 homes were destroyed. Roblin and other leaders pledged to build anything required to

prevent this ever happening again. The "Ditch" has been used 18 times since 1968, successful every time. This year, the Red's flood crest at Winnipeg would have been 1.6 meters higher than in the disastrous 1950 flood. But the floodgates were opened on April 21, and the city saved.

The photographs, taken in July, when floodwaters had waned, show views of the signpost, the Red in its natural riverbed, the receded floodstream remaining in the Floodway, and the floodgates, control tower, and walkway. Though modest-looking here, the 29-mile long ditch was visible to the astronauts on the Moon in the 1960s.

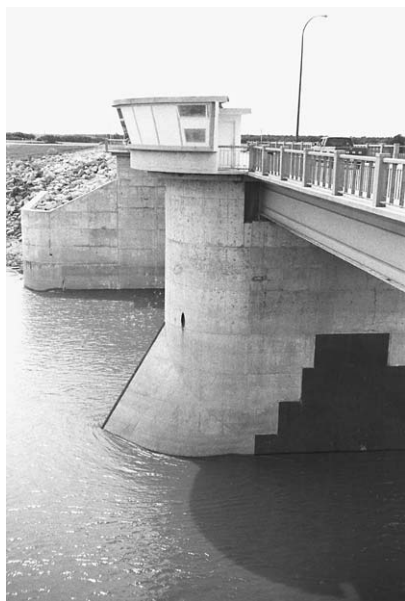
"Duff's Ditch" took three years of planning, and six years of building.

The chief hydraulic engineer was Ed Kuiper, from Holland, who remained in the area as an engineer at the University of Manitoba. At the height of the project, in summer 1965, some 1,000 people were working on construction. Building the Floodway required moving

more earth than was moved to construct the Panama Canal.

The cost of the Floodway project was \$63.2 million (Canadian dollars); it was paid for in cash, with the Federal share being 58.5%, and the rest paid by Manitoba Province. Officials put the value of damage prevented by the Floodway, in the 18 times it has been used between 1969 and 1997, as high as many billions of dollars—far more than the cost of the "Ditch."

The Red River is a relatively young river (less than 10,000 years old), about 545 miles long (844 km), whose basin is mostly the level plane of the former Glacial Lake Agassiz, making flood protection difficult in such flat terrain. This year the Red River turned into the "Red Sea," covering 1,000 square miles, or 640,000 acres, but the Floodway shows that infrastructure works.—*Marcia Merry Baker*



Counter-clockwise from top left: Floodway signpost; floodgate structure with control tower; Red River running in its own channel; Duff's Ditch.