

Ship canal was storm funnel during Katrina

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The man-made Mississippi river gulf outlet made Katrina's impact worse. A short cut for shipping into New Orleans acted as a "storm surge superhighway", funnelling water into the city when hurricane Katrina struck.

Hundreds of metres wide and 11 metres deep, the Mississippi River Gulf Outlet (see Map) was built to save ships more than 60 kilometres' travel along the winding Mississippi.

As Katrina crossed the Gulf of Mexico in August, Hassan Mashriqui of Louisiana State University in Baton Rouge ran simulations showing that the MRGO would funnel storm surges from the Gulf and Lake Borgne into New Orleans. He predicted that a surge of 2 to 3 metres per second would breach the walls of the Industrial Canal, which joins with the MRGO, and flood low-lying areas.

These predictions were correct, says Paul Kemp, also of Louisiana State University, who has now modelled the Katrina storm surge. The MRGO suffered the highest storm surges in Louisiana before giving way. That failure led to the flooding of the city's St Bernard Parish.