IF GEORGES HADN’T TURNED

New Orleans most recently dodged catastrophic flooding in 1998, when Hurricane Georges cut across the Gulf of Mexico on a beeline to the mouth of the Mississippi River. As half the population fled, the storm veered to the east and made landfall in Mississippi. The hurricane caused flooding in St. Bernard Parish and also pushed waves from Lake Pontchartrain up against its south shore levees, leaving many to ponder: What if?

ST. CHARLES SUBMERGED
Here, water in the lake would reach heights of 3-5 feet above normal, spilling into wetlands and towns in St. Charles and St. John parishes. The water would be deepest near the river levees.

LAKE LEVEES HOLD
Winds on the west side would be minimal due to the hurricane’s eye stalling over eastern New Orleans. The levees stop the surge, but some waves could find their way over.

LAKE LEVEES HOLD
Winds on the east side would be strong, however, pushing waves from Lake Pontchartrain’s levees stop the low-level surge.

GRAVITY’S GATEWAY
Relentless winds from the stalled hurricane push a dome of water 14 feet above sea level at the levees. The model shows that water would break over the levees and move east into Jefferson and Orleans parishes. Jefferson’s levees fail in some areas, would be submerged 10 feet but protection would be down near the river.

THE MODEL
A computer model designed by LSU scientists Joseph Sula and Wayne Attema was used by government agencies to prepare evacuation plans. The model assumes what would have happened if Georges had not turned. This scenario assumes that the storm continued on its track and intensity forecast by the National Hurricane Center on Saturday, Sept. 26, 1998, at 4 a.m. In the model, Georges intensifies to a Category 5 with 115-mph winds when it makes landfall just west of the mouth of the Mississippi.

EXPLAINING THE BOWL
Much of the lake’s below sea-level, creating a natural “bowl.” Storm surge simply follows the law of gravity, meanders to the hurricane’s eye, and meanders to the hurricane’s eye.

CITY BELOW THE SEA
When a hurricane even stronger than Georges hits New Orleans, Lake Pontchartrain acts as a levee, pushing water into wetlands and towns in St. Bernard and St. John parishes. The water would be deepest near the Mississippi River levees.

PUMPED UP LAKE
Stalling winds would drive the storm water from Lake Borgne and from Breton and Chandeleur sounds into Lake Pontchartrain, raising the lake’s surface by 5 feet.

STORMS NOT TURNED
Levees stop bulk of surge, but waves could cause considerable flooding. A look at average surge levels by category, compared to a cross-section of the city shown as “the bowl.”

Surge crashes inland with high wind-driven waves on top.

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