

Standing up to storms

The new Houghton Highway bridge will be designed to withstand a 1-in-2000 year storm event.

It will be the first of its type in Australia, and among the first in the world, to reflect the lessons learned when Hurricane Katrina hit the Gulf of Mexico in August 2005.

Hurricane Katrina

A storm surge occurs when the water level rises due to a low pressure weather system, typically a tropical cyclone. When waves driven by wind from a cyclone occur at the same time as a storm surge, the result is a higher and more powerful wave that can have a devastating effect on coastal infrastructure.

Hurricane Katrina destroyed several bridges in the United States, including the Biloxi Bay Bridge as shown below. Hurricane Katrina was at Category 3 intensity when it crossed the Gulf Coast in August 2005. For comparison, Cyclone Larry was a Category 4 when it hit Innisfail in March 2006. Bridges being reconstructed in coastal areas of the Gulf of Mexico have now been designed to be above the highest wave that could realistically occur.

Prior to Hurricane Katrina, there were no design guidelines for wave loads on bridge decks. Research reported from the University of Southern Alabama in September 2006 shows that wave loads on bridges could be very large. This knowledge has been incorporated into the design of the Houghton Highway Duplication Project, one of the very few bridges in Australia which would be affected by a storm surge.

How the new bridge will survive storms

The duplicate Houghton Highway bridge has been designed above the height of a wave that could occur in a 1-in-2000 year event, in line with trends for similar bridges around the world.

Redcliffe's vital link is expected to remain standing through extremely severe storms, making post-storm recovery quicker.

Feedback and enquiries

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Impacts of Hurricane Katrina on bridges in the United States