**Operational Risk Assessment of Auckland Harbour Bridge during Wind Events**

This project investigated the use of the Auckland Harbour Bridge (AHB) in high winds, with a primary focus on safety. The client NZTA Waka Kotahi requested a Qualitative Risk Assessment on the AHB. The analysis aimed to investigate the impact of the Transport Control Equipment and the potential to increasing the allowable wind speed at which the AHB should closed to traffic.

The Aurecon team worked closely with the client, co-creating risk factors and three failure mechanisms while balancing continuity of operation with safety. The team analysed wind speed data, the NZ heavy vehicle transport fleet, likelihood of exposure, and determined the target speed when high-sided vehicles became vulnerable. We made the complex simple, delivering a detailed analysis of the relationship between closure wind speed and the potential risks.

The analysis revealed that the ITS signs and systems play a critical role in the safe operation of the AHB during high wind events. Even displaying a slight increase in closure wind speed on the Lane Control Signals (LCS), could potentially cause vehicles traveling at the legal speed limit to lose control and cause serious accidents.

Despite pressure to keep the AHB open during higher winds, the teams technical work and commitment to safety provided evidence and guidance for the operation and potential upgraded to minimise the risks of any further wind related incidents.

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