Lihou Island Causeway Supplement - Risk Assessment

This document is a supplement to document 052-Risk Assessment Lihou Causeway. It explains the calculations used to work out the causeway opening times for Lihou Island.

Drying Height of the causeway: 2.9mtrs above datum

Causeway Description/features:
The causeway, in its current form, was constructed in the middle of the 1800's. It was constructed primarily for the movement of vraic and iodine to and from the island. The winding route was chosen as it followed a natural line avoiding the larger rock areas which would have made its construction impractical. Where the causeway traverses through the rocky foreshore at both the west (island) and east (Guernsey) ends, it is cobbled with granite sets. In the middle it is shingle and protected by a rock wall made up of large boulders. The shingle section is the lowest section and has a 2.9 mtr drying height calculated at normal barometric air pressure of 1013 mb. At the Guernsey end there is a rough slipway of some 5 mtrs wide constructed out of rough granite sets and at the Lihou end, the causeway finishes and the final approach is made by the sand/shingle beach. In all the causeway is 800 metres in length.

Causeway Times Calculations
The Lihou Charitable Trust uses a standard St Peter Port Tidal curve and Admiralty Digital Services software to calculate the causeway times. The tidal date is provided by The United Kingdom Hydrographic Office. The opening and closing times are calculated from when the water levels reach 2.9 metres above datum.

Seasonal/Time Safety Margin
During the winter months (October to March inclusive) the Trust causeway times are calculated using a fictional drying height of 2.7 mtrs. This results in a shorter published open period than might actually happen to allow for low barometric pressure and/or the effects of strong westerly winds. This policy has been tested and proven since 2006. The Trust also do not use the causeway for groups if the causeway open time are calculated to be less than 30 minutes.

Worst Case Scenario
When any group is using the house on Lihou for residential purposes the weather is monitored. If, in the unlikely event, the winds and barometric air pressure were to pose a risk of stranding one of the following actions would be taken;

- The warden, if not resident with the group, should be contacted to help make an informed decision.
- The group removed at an earlier opportunity
- The group cancelled prior to their visit if necessary

The States of Guernsey Environment Department Official Causeway Opening Times
The States of Guernsey Environment Department also publish causeway times. These are available from their website for the year and also from the Guernsey Press for the week following as well as the notice boards at either end of the causeway for the month. These times are intended as a guide to the general public for the safe use of the causeway. They have been calculated to take into account the following factors;

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- Daylight
- Open periods of more than an hour to facilitate the passage of visitors to and from the island
- Adverse weather situations
- A higher drying height
- Periods of less than one hour to be listed as closed
- No night time times published

The States Engineers calculate the times and then The Environment Department look through them and remove dates using the above criteria.

Discrepancies in Our Times and The States of Guernsey Times

The Lihou Charitable Trust causeway times are different from The States times. This is due to the following factors;

- A different drying height
- House residents travel one way
- Crossing of the causeway is under the supervision/ratification of either the warden for the Lihou Charitable Trust or a suitable deputy appointed by the Trust for the occasion

In case of emergencies

The causeway is crossable by foot safely with a depth of water in the lowest point of 30cm's (3.2mtrs above datum) Should the early evacuation of an individual or group be required then this calculation be taken into account. The Tractor can cross with a depth of water of up to 50cm's (3.4mtrs above datum). From a height of 3.4 mtrs above datum the tidal flow over the causeway area at its lowest point is negligible but flowing from north to south. Passage through water deeper than this should not be undertaken.

NOTE: Low Tide

The time and predicted height of low water is published in numerous places. Most notably The Guernsey Press, Tide tables provided by the Harbour Office and also the internet to name a few. It is also worth noting that the passage of the tide is described by the use of a tidal curve. The period of low water is a protracted period as the curve flattens before starting to rise again like a roller coaster. This results in the exact point of low water being a period rather than an exact time.

- The risk assessment is a general risk assessment for Lihou Island. It is not exhaustive and should be used in conjunction with a risk assessment written by the user group, making note of any special needs or issues that are specific to that group.
- For further information or to comment, please contact the warden.