

Orwell Bridge closure protocol summary



This document is a summary of the full Orwell Bridge closure protocol. Confidential material and operational detail has been removed.

The aim of this document is to describe the key decision-making considerations for closing Orwell Bridge during strong wind events. It also explains when Highways England will re-open the bridge after the wind has receded.

A cascade diagram is included within this summary to indicate the primary contacts who Highways England communicate with prior to, during and following a bridge closure. It must be noted that these contacts have their own specific cascades which are used to further disseminate information to bridge users.

Executive summary

This summary describes the key elements of the Orwell Bridge closure protocol.

There are a number of changes that have been made in order to reduce the impact of bridge closures on the diversion route through Ipswich.

The decision to close the bridge is now based on the Met Office forecast, rather than live wind speed data from the bridge. This enables Highways England to inform its customers in advance of any potential closures and reduce the impact of traffic on the diversion route through Ipswich.

The bridge now re-opens when three consecutive wind speed readings below 45mph have been recorded on the weather station on the bridge. The previous protocol worked on the basis that three readings below 30mph were needed in order to re-open the bridge. Therefore, the carriageway is now closed for a much shorter duration during stronger winds.

There is an increased emphasis on early communications when higher winds are forecast. Highways England have worked closely with partners and customers to devise a communications cascade that is used prior to, during and following closures of Orwell Bridge.

The installation of fixed signage on the carriageway has greatly reduced the time required to implement and remove the road closures.

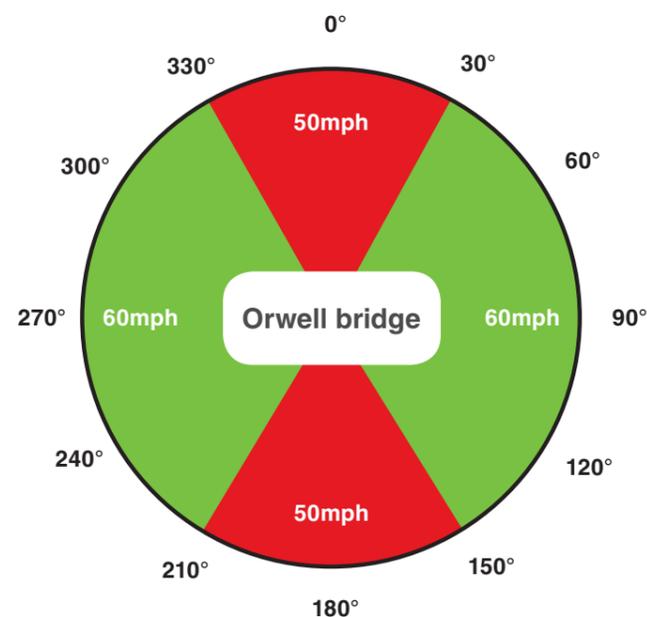
Wind speed intervention levels

This plan works on the assumption that the Orwell Bridge will be closed to all traffic if wind gusts of 50mph are predicted to a high degree of certainty in a non-favourable direction i.e. within the red zone on the quadrant diagram (Southerly between 145o – 205o and Northerly between 325o - 25o).

The bridge will be closed to all traffic, regardless of wind direction, once gusts of 60mph or higher are forecast. This is in line with best practice across the UK and is based on studies into the susceptibility of high-sided vehicles to overturn in strong winds.

Quadrant diagram

This diagram shows the thresholds for closing the Orwell Bridge at specific wind speeds and wind directions.



*For illustration purposes only

Closing the bridge for strong winds

The decision to close Orwell Bridge due to winds exceeding, or likely to exceed, the threshold rests with Highways England who will consider the Met Office's forecast as well as live data from the Orwell Bridge weather station.

The bridge will be closed when the Met Office predict, with a high level of confidence, that the wind speeds will exceed the pre-determined thresholds.

If time permits, Highways England may place resources on stand-by and liaise with partners at an early stage allowing for the bridge to be closed at the optimum moment to minimise impact on diversion routes.

The safety of operatives and the public must be considered at all times. Therefore, the decision to close the bridge must be made expediently to allow appropriate warning, informing and safety measures to be implemented.

In order to safely place signs and cones on the carriageway, the implementation of the road closures must take place before the winds reach 50mph. It is acknowledged that the carriageway may be closed some time before the closure threshold is reached.

Highways England has installed fixed signage to the carriageway for road closures. These signs have greatly reduced the amount of time it takes to close and re-open the carriageway. It is now possible to close / re-open the bridge in 20 minutes, as opposed to over 50 minutes previously.

Re-opening the bridge after strong winds

The decision to re-open the bridge will be based upon two key sources of information:

- The Met Office Advisor, who will provide detailed forecast information for Orwell Bridge.
- Live wind-speed data from the weather station on the bridge.

The bridge shall be deemed safe to open based upon:

- The Met Officer's advice.
- When 3 consecutive wind speed readings below 45mph have been recorded on the bridge.

Once these 2 criteria have been satisfied, Highways England shall lift the closure as soon as it is safe to do so.

Highways England will monitor the wind speed data on the bridge throughout the closure. Maximum wind gusts are recorded at 10 minute intervals. It is possible that the decision to reopen the bridge can be made within 20 minutes of the first wind speed reading below 45mph.

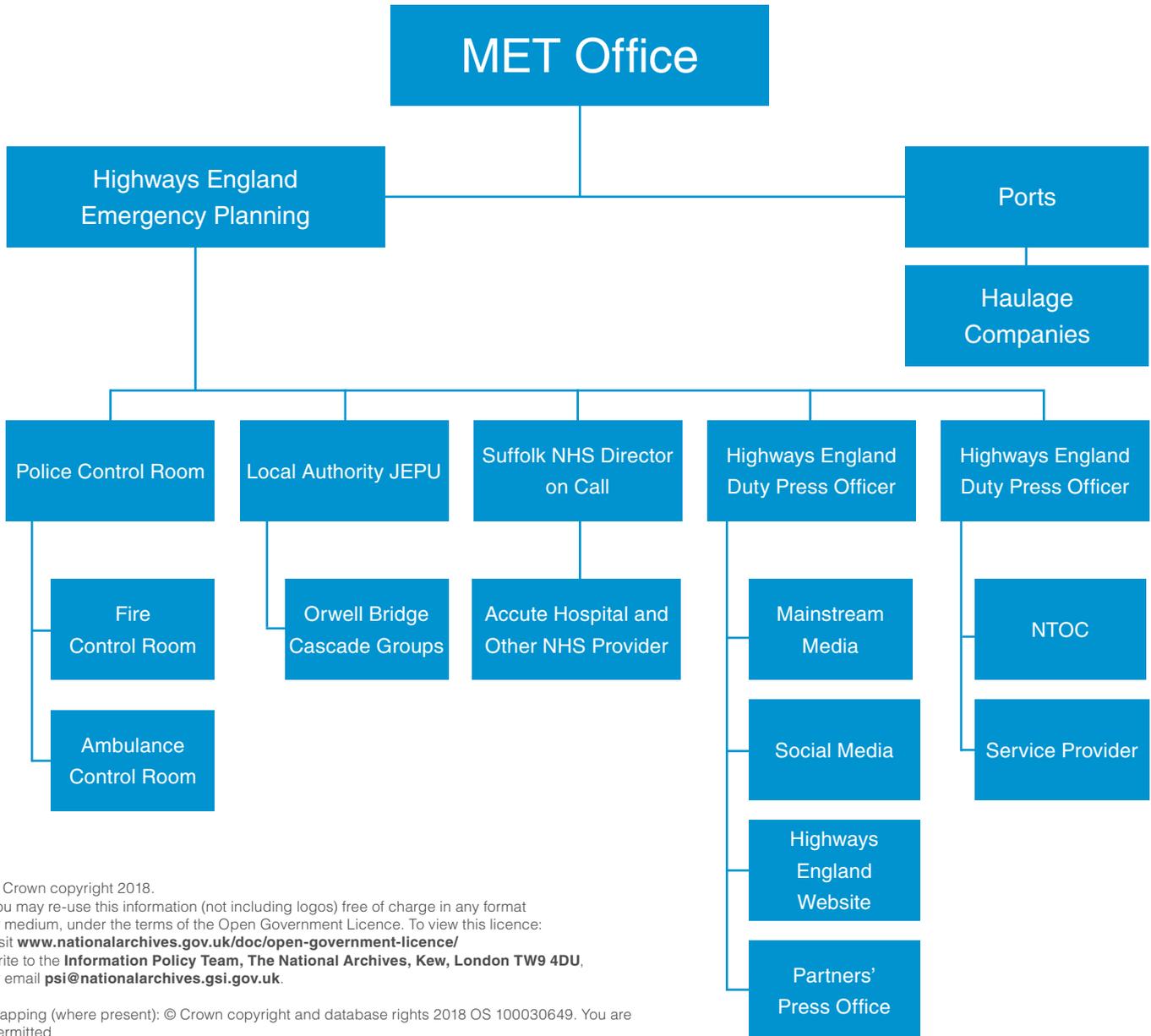
Resources will be on stand-by near the bridge to lift the traffic management and re-open the carriageway as quickly as possible once the decision has been made to remove the closure.

Once the bridge is open, Highways England will publicise the re-opening as widely as possible via the media, social media and by utilising the communications cascade (described below).

If you need help accessing this or any other Highways England information, please call **0300 123 5000** and we will help you.

Cascade

The cascade below shall be used to pre-warn of bridge closures and to confirm when the bridge is closed and re-opened. It must be noted that Highways England will also use traditional media and social media to inform customers. The electronic messaging system across the road network will also be utilised.



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