



Water level sensing technology from OTT Hydrometry is being used in an intelligent flood warning system that has been installed at a ford in Kenilworth, Warwickshire. The system, which was designed and installed by SWARCO Traffic, monitors water level in the Finham Brook where it passes under the A452, and warns drivers when potentially dangerous conditions arise.

Working closely with Warwickshire County Council (WCC), SWARCO provided a set of four signs on the approach and in close proximity to the ford. The two signs that are closest to the ford initially warn of water on the carriageway (up to 100mm); these alert drivers to the flood and the risk of aquaplaning. When the water rises above 100mm the two outer signs are activated to enable drivers to take an alternative route, and the inner signs provide an additional message that the ford is impassable.

David Matthewson, team leader of the Traffic Control and Information Systems team at WCC, says: "This ford can be the cause of significant traffic problems during flood conditions; partly because drivers are unsure whether the road is passable and also because smaller cars can get into trouble when a passing larger car causes a wave.

"The two trigger levels were based on potential risk to motorists and although these can be adjusted locally onsite, we initially erred on the side of caution at commissioning. Following three periods of flood since late December 2015 we have slightly adjusted the trigger levels to reflect the depth of water on the carriageway during a flood."

The water level sensor is an OTT PLS (Pressure Level Sensor) located in a slotted stilling well. Designed for field applications, the robust PLS has a stainless steel housing, an integrated controller and a ceramic pressure-measuring cell. The sensor has an analogue output that can be adjusted onsite. The SWARCO system uses a UTMCI interface to communicate with Warwickshire's existing UTMCI Common Database which in turn sends commands to the low energy/high visibility LED signs.

SWARCO has also worked with OTT Hydrometry on a similar system in Warrington. “This is a new solution to an old problem,” says Derek Williamson, Head of Sales for SWARCO Traffic. “We have used our expertise in traffic management technology to design a bespoke system that had previously been used to warn of high winds on viaducts and traffic queues, and adapted the concept to develop an intelligent system providing warnings for dangerous water levels.”