



# Sustainable flood alleviation solution benefits passengers and the local community

I'd like to give thanks to passengers and the local community for their patience over the last nine days as we worked around the clock to complete the installations as part of our Railway Upgrade Plan. The new flood resilience measures will mean we can provide a better, more reliable railway for passengers travelling through the south west.

**Rebecca Wells, Senior Project Manager for Network Rail**



<b>PROJECT</b>	River Axe Flood Alleviation
<b>CUSTOMER</b>	Network Rail
<b>LOCATION</b>	Wessex Route, Devon
<b>CONTRACT</b>	Framework
<b>COMPLETION</b>	2018
<b>VALUE</b>	£9m



# Issue

Significant flooding on the River Axe, near Axminster, in Devon 'washed out' a section of the railway embankment. The immediate impact to passengers and freight was several days of track closure for emergency repairs.

Network Rail sought a permanent flood alleviation solution at two locations, Broom Lane and Axe Farm, to safeguard this part of the Salisbury to Exeter route.

The challenge for us was implementing a sustainable solution that met the diverse needs of the funders, the regulatory bodies and local authorities, the train operators and users, and the local rural community.

# Solution

Under the 'One Team Wessex' collaboration on the Network Rail's IP Southern Multi-functional Framework, we were appointed to design and construct the scheme. From the outset collaborative relationships were formed to understand the expectations and concerns of all impacted parties. This early engagement smoothed the way for a sustainable solution that reduced risk.

Specifically we aimed to:

- Reduce environmental impact and protect the SSSI/SAC.
- Provide economic benefits
- Give back to the community in which we work.

## What did we do?

Selection of a pre-cast concrete culvert embankment over a piped or bridge option was an important decision. With installation scheduled for a 9 day rail closure and with access restricted by rural roads through the village of Hawkchurch, the culvert offered sustainable benefits:

- Off-site fabrication with controlled delivery of the 46 units totalling 550 tonnes, reduced road disruption.
- There was no requirement for site pre-assembly in the SSI/SAC.
- It was the lowest embodied carbon.
- The controlled factory quality reduced future maintenance risk.
- Installation of the units was predictable resulting in hand back 9 hours early.

During the 9 day closure, 9000 tonnes of embankment spoil was removed and the units, cranes and equipment delivered. The narrow rural roads were a challenge and as a result of early community consultation we:

- Re-routed 50% of loads away from the village combined with village movements

restricted to 4 HGV's per day outside of school drop off/pick up.

- Arranged for 9000 tonnes of spoil to be used for farm improvements.
- Collaborated with the council to install a temporary re-useable bridge for our work, which benefit the farming community and diverted traffic from the local village.

Giving back to the community was important and so was the health and wellbeing of our people. To reduce travel time, improve wellbeing and input to the local economy our people stayed nearby in Hawkchurch. The team became part of the community for 8 months, supporting the local fete and building a play area for the school.

# Outcome

Adoption of sustainable objectives from the start has resulted in no environmental incidents, input to the local economy and improvements for the local school and the community of Hawkchurch.

The 9 day planned track closure was back in operation 9 hours early which reduced the impact on train operators and passengers and saved cost. Overall the scheme has alleviated local flooding to provide improved rail service reliability between Salisbury and Exeter.