Cumbrian bridges ripped

Six bridges collapsed and 1,800 to be inspected

CUMBRIA FLOODS
By Jessica Rowson & Alexandra Wynne

Structural engineers from across the UK were being rushed to Cumbria this week as the local highways authority battled to inspect 1,800 bridges following extreme floods.

Network Rail, the Highways Agency and the Royal Engineers have been assisting with inspections and an additional 65 engineers were expected to arrive in the area as NCewent to press.

“Capita Symonds is organising bridge checks and has redeployed some staff [from around the country],” said Cumbria County Council highways network manager John Robinson.

Capita Symonds has been working on Cumbrian highways for the last 10 years.

“Preliminary checks assess which bridges are affected and which ones aren’t,” said Robinson.

Six bridges have already collapsed and many more remain closed while urgent structural checks take place.

Most of the collapsed bridges were masonry arch bridges – some over 100 years old – in the area of Workington and Cockermouth.

Northside Road Bridge at Workington was the first to be swept away in the early hours of Saturday 21 November resulting in the death of PC Bill Barker.

By the end of Saturday five more bridges – Northside Footbridge in Workington, Lorton bridge near Cockermouth, Newlands Beck Bridge near Keswick, Camerton Footbridge linking Great Clifton with Camerton and the suspension footbridge over River Eamont near Dalemain – had collapsed.

“Masonry arch bridges don’t like being disturbed,” said Capita Symonds structural engineer Kenny Brooks, who has been assessing much of the damage over the weekend. “They rely on compression and when something moves, the cracking causes distress. They are strong when in place but not adaptable to movement. Modern bridges are more flexible. They still fail, but it’s less dramatic.”

Local authority engineers’ body CSS’s bridges group chairman Mike Winter who is also Dorset County Council’s head of engineering agreed that the strain on the bridges was excessive when exposed to extreme flooding.

“Bridges are designed to take loads from above. But the water must have caused immense horizontal forces below,” he said.

Brooks confirmed that it was the sheer weight of the water as well as scour which caused the larger road bridges to be swept away. Debris in the flood waters helped cause the collapse of the smaller pedestrian bridges.

“Weet’s what’s been pushed off the supports,” said Brookes. “It seems] the foundations are still in place, but the deck has gone. Decks have been pushed off the supports.”

Workington’s Calva Bridge on the A596, has been severely...
Mabey in talks to supply temporary replacement for damaged Calva Bridge

By Jo Stimpson

Temporary bridge specialist Mabey is in talks with Cumbria County Council to replace the 80m long condemned Calva Bridge after military solutions were deemed unsuitable.

The council has met with Mabey Bridge, Mabey Hire Services and the Royal Engineers, said Mabey Bridge UK director Alex Smale.

“We are in some discussion in terms of temporary bridges for Cumbria,” he said.

Mabey Hire Services director for bridges Chris Carter said no fixed plans for Calva were in place yet. “We are doing an early feasibility study for them but I believe that there are other options they are discussing,” he said.

Calva Bridge is the “first one to look at”, he said, and the council has not yet approached the company about any other crossings.

“We are waiting for Cumbria [County Council] to assess all the structures and make its decision,” said Carter.

Council officials consulted the Royal Engineers about Calva Bridge but it was decided that military solutions were unnecessary, said a Ministry of Defence spokesman.

Ministry of Defence regional community relations officer for Cumbria and Tynedale Carol Bell said a small team of Territorial Army specialists were tasked with helping assess damage to Calva Bridge in the early hours of Sunday morning.

They were “asked to ascertain whether a solution using military equipment could be used to span the River Derwent”, she said.

Carter said Mabey’s pre-engineered steel modular truss Delta Bridge and heavy duty modular design Universal bridge were most likely to be used at Calva, because they can be built quickly and are available from stock.

Temporary railway station for Workington

By Alexandra Wynne

Network Rail was this week scrambling to build a new temporary railway station for cut-off residents of flood-torn Workington in Cumbria.

It said that it intended to begin construction on Tuesday night and would construct a two platform station, linked by a footbridge, with lighting, a waiting room and a gravel car park.

The operator vowed to have the facility built and open by the weekend.

The town has been split in half following flood damage to the footbridges and road bridges in the area.

Aerial surveys helped to identify possible sites before the operator settled on an area of wasteland 800m north of the existing station, off the A596 and on the north side of the River Derwent.

Network Rail then came to an agreement to lease the site from Allerdale Borough Council for two years.

“We have a wealth of experience and engineering expertise that we felt should be put at the disposal of the Cumbrian authorities,” said Network Rail director operations and customer services Robin Gisby. “Our people will work round the clock to build a temporary rail station to help reconnect the town and ease people’s travel problems.”

One option for Network Rail could be to deploy an innovative new modular railway station it has been investigating and testing with Dean & Dyball Rail.

In addition, Network Rail said it was working with local operator Northern Rail to bolster services by adding carriages where possible.

The operator has also asked the council to work the station into local bus routes.