



Stonbury delivered emergency bank stabilisation works as part of a new River Restoration Framework in the north of England.

The purpose of the project was to provide stability to an essential access route. The road - which provided access to a wastewater site - was at risk of erosion and collapse after years of degradation caused by several flooding events. Works included the installation of a temporary timber revetment below the access track and improvements to the track, and stabilisation works on the surrounding embankment.

Consent was obtained from the local council and Natural England for in-river working which provided the team a limited time window of two days to complete the works. It was critical that the team completed the works in this time-frame as safe access to obtain samples had become impossible during the past six months and the site was no longer compliant with Environment Agency standards.

A sustainable pre-bagged vegetated retaining wall system was chosen to reform the embankment. Sandbags were placed within the river to create a diversion for the water and provide a dry working area for the retaining wall system to be installed. The area was excavated by hand to below the riverbed level to allow a foundation course to be built using gravel-filled bags, these were then compacted and

levelled, and interlocking plates were used to bind the bags together. Pre-seeded bags were then stacked to form the retaining wall to the desired height. The sampling point outfall pipework was installed as the work on the retaining wall progressed.

At the eroded access track a timber revetment was constructed from 4-inch wooden posts and sleepers. Locally-sourced clean stone was used as backfill and compacted after every two courses of the bags were installed. A hardstanding access path and sampling area was then constructed using clean 40mm gravel and surrounded by timber handrails.

The works will allow the client's operators to safely carry out routine sampling of all discharged water as it re-enters the environment. Site meetings have taken place to agree permanent solutions for the site which will include natural flood management, sheet piling and additional retaining wall installations. These will be designed and delivered by the specialist Stonbury team next year when the in-river working period begins.