1.0 Introduction

Sabden Weir is an old stone-built weir on Sabden Brook which originally supplied water for Victoria Mill. The weir has a head of approximately 2 m, and has a small step at the toe, a sloping face, a further step at the top and a notched crest behind. The weir is within the village of Sabden and is adjacent to a small area of parkland on the right hand river bank. On the left hand bank the weir is bounded by disused mill buildings which are earmarked for redevelopment. Shortly downstream of the weir foot, Sabden Brook goes into a culvert under Victoria Mill. This is expected to be de-culverted as part of the future re-development of the site.

The proposal is to resurface the weir with concrete-embedded natural rock to create a natural looking rough surface. Two diagonal boulder groynes will also be constructed to direct the water down the weir, elongating the flow path and creating a depth of water through which fish can swim.

2.0 Assessment of Flood Risk posed by the works

The embedded rock ramp will not increase flood risk. The primary flood risk in the locality is the culvert downstream which restricts channel capacity. No part of the rock ramp will project above the level of the weir crest and will not affect bed levels upstream or downstream of the weir. Bed level at the weir itself will be raised by up to 440 mm (750 mm at groynes), however this is not thought to constitute a significant reduction in channel capacity or increase to flood risk. The proposed works do not entail any abstraction from, or discharge to the river so will not affect the quantity of water in the channel.

![Flood Map of area surrounding Sabden Weir](image-url)
Figure 2. The downstream culvert under Victoria Mill as viewed from the weir. N.b. the central support column is no longer there.

The groynes of the rock ramp will change the flow direction of the water over the weir under normal flow conditions. This will encourage the majority of the flow in a longer ‘zig-zag’ flow path, with the main flow exiting the weir on the left side rather than the centre as it currently does. However, under elevated flow conditions, the groynes will be drowned out and the river will over top them. In these conditions the flow dynamics over the weir will not be substantially different from present.

The bankings of the river adjacent to and downstream of the weir are all stone walls with concrete footings. On top of these, or arising straight from them are the stone walls of the mill buildings. The only soft banking is upstream on the right bank which is a tree-lined bank and shows no signs of active erosion.