

Executive Summary for Newby

Atkins were commissioned to undertake a preliminary feasibility assessment of the mechanisms of flooding in the Newby area. In addition, this feasibility report was required to determine whether the project was feasible to proceed to the more detailed assessment and modelling stage.

Historically, the area of Newby has flooded frequently from the watercourse that flows through it via culverts and open channel sections. The main reason for flooding is the incapacity of the culverts and channel sections that are required to take flows from a flashy, urbanised catchment.

A 100 year flood envelope has been estimated from historical data and has found to encompass 63 properties with approximately 9 properties at risk for a 5 year event. This substantiates Scarborough Borough Councils designation of Newby watercourse as a Critical Ordinary Watercourse.

Three options have been assessed to alleviate flooding: replacement of the main 220m long culvert (Option A); providing a storage solution upstream of the aforementioned culvert (Option B); and diversion of the main 220m culvert (Option C). Cost benefits of the schemes were found to be robust and favourable. Option B was found to be the most favourable scheme, with Cost Benefits ranging from 2.9 to 4.8 and a Defra Priority score of 12.1. Costs included channel widening/regrading and regular maintenance.

It is, therefore, recommended that this scheme is progressed to the detailed modelling and assessment phase.

The risks associated with this assessment are mainly due to the estimated 100 year flood envelope, although as this is based upon historical data combined with the robust benefit cost ratio, it is felt that this risk is within manageable limits. A detailed modelling exercise in the next phase would more accurately define the flood envelope and determine flood defence levels.