

Executive Summary for Woodlands

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

Historically the area of Woodland and Throxenby 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 that are required to take flows from a flashy, urbanised catchment.

Due to the relatively no historical flooding of properties from the Throxenby watercourse it has not been classified as a COW. Woodlands watercourse has flooded several properties and is classified as a COW.

For Woodlands Beck a 100 year flood envelope has been estimated from historical data and has found to encompass 55 properties with approximately 8 properties at risk for a 1 in 2 year event. The flood envelope also encompasses the hospital access and flooding of this part can therefore cause risk of lives (see table 2.1).

The flood envelope for Throxenby Beck is estimated to be 2 properties in a 100 year flood event.

Three options have been assessed for each watercourse to alleviate flooding problem.

Since there is no record of flooding of properties from **Throxenby Beck** only the do minimum scheme appears economically feasible. This scheme requires the replacement and regular maintenance of the trash screens and culverts. The benefit cost ratio for this scheme has been determined to be between 1.9 and 2.4, although it should be noted that this will only result in a protection standard of 1 in 10 year standard.

For **Woodlands Beck** the preferred and most feasible option is to construct a flood protection wall around the vulnerable properties near Hovingham Drive (Option C). This scheme would bring a 100 year standard of protection to the area and the hospital access. The preliminary benefit cost ratio for this option is between 7.1 and 13.2 and a DEFRA priority score of 18.5.

It is, therefore, recommended that the Woodlands 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.