Appendix E Modelling limitations

- The computerised flood mapping is based on the model-predicted maximum water levels for the given flood scenario intersected with the digital elevation model. The digital elevation model was created from the photogrammetry data collected in 1997. This means that the digital elevation model does not take into account any changes to the topography of the land since 1997. In Tonbridge the ground survey, commissioned by Mott MacDonald (2006), has been incorporated into the DEM to improve the representation of current ground levels. However, the 1 in 100-year flood and the 1 in 200-year flood outlines presented may not take into account some recent development or changes in topography which, such as new embankments or land raising.

- The complexity of the river system around Tonbridge; including sluice gates and by-pass channels, means that the hydraulic model provides a slightly simplified representation within this area. However this should not significantly impact on the results provided by the model. Results from the model have been calibrated against previous event data and shown to provide a good representation of flood levels in the area.

- The model also assumes that there are no blockages on the watercourses. Blockages especially at structures (i.e. bridges and culverts) could result in increased water levels.

- Outflow from the Leigh Barrier has been simulated using Option 3 from the LEBOP study (Ref 1). This provides a slightly conservative estimate of outflows as operators at the barrier tend to release greater volumes of water preceding a storm event.

- It is assumed that flood walls embankments remain intact through the storm duration.

- The Environment Agency Extreme Flood Outlines used to identify the inundation area during a 1 in 1000-year flood event are based on a relatively coarse national hydrological model combined with a new national DTM sourced from Interferometric Synthetic Aperture Radar (IFSAR) techniques, giving a vertical accuracy of +/- 50cm.

- The SFRA look at flooding from main rivers in Tonbridge and Aylesford. It is possible that flood could come from other sources. Engineering judgement and ancillary data has been used when mapping flood flows through the urban area. To ensure the flood extent is the best estimate possible.