

Technical Methodology

Introduction

1.1 This appendix describes the methodology used to generate the climate change outlines for the coastal zones at risk from tidal inundation. The methodology involved the production of new data sets based on extreme tidal still water levels of return period 200 and 1000 years, taken from the 'Report on Regional Extreme Tide Levels' (Posford Haskoning Ltd, 2003). The effect of climate change on sea level rise has been based on guidance provided in PPS25.

Climate Change Outlines

1.2 Climate change outlines were produced for the year 2115, based on recommended contingency allowances for net sea level rise, as shown in PPS25, Table B.1. The climate change outlines were generated by applying the extreme tidal still water levels including the effect of climate change to a Digital Terrain Model (DTM) produced from LiDAR data. The methodology used to create the tidal outlines is detailed as follows:

- A water surface grid was created for each of the five areas identified as being at risk from tidal flooding based on the Environment Agency Flood Map. Extreme tidal still water levels including the effects of climate change up to 2115 were applied to each surface water grid;
- The DTM was subtracted from the water surface grid, resulting in a flood depth grid, where positive values indicate that the area is within the flood extent;
- The flood depth grid was contoured, to produce a polygon representing the flooded and non-flooded areas.

1.3 It was not possible to create fluvial climate change outlines using the same technique. Instead climate change Flood Zone 3 (1 in 100 year flood extent) should be represented by the present day Flood Zone 2 (1 in 1000 year flood extent). This approach means that it is not possible to identify a climate change fluvial Flood Zone 2. However in the absence of fluvial climate change modelling this approach represents the best available approximation.