

Isle of Wight Strategic Flood Risk Assessment MK2

Appendix U Rookley



June 2010



Overview

Please review this discussion in conjunction with the mapping provided in this Appendix.

Rookley is located in the south of the Island, around 5km south of Newport, and has been classified AS A Rural Service Centre (RSC). The settlements location on the knoll of a small hill places all existing development and potential development sites in Flood Zone 1. The local topography also places Rookley at the head of the predicted local surface water flow routes. Only the site areas will require FRAs to be undertaken for any future development, these FRAs should carefully consider the implications that landuse change may have on the potential run-off rates and volumes, as required by PPS25.

Sustainability and Regeneration Objectives

Development within the wider countryside will be focused on the Rural Service Centres (RSC) such as Rookley and should support their role as wider centres for outlying villages, hamlets and surrounding countryside. For the rural service centres development will be expected to ensure their future viability. Within the rural service centres and outlying rural areas, development will be expected, in the first instance, to meet a rural need and maintain or enhance the viability of local communities and will be subject to local considerations.

Rookley RSC has been identified as having the potential to accommodate further development to meet the regeneration aims and needs of the local community, through improving local services and strengthening public transport. Development will be encouraged on brownfield sites in the first instance and tourism will be promoted.

Sites at Risk

All the potential development sites in Rookley are in Flood Zone 1. There are rivers and associated flood zones located to the west and east of the site, but these do not affect the settlement or any of the potential development sites because these are positioned on higher ground.

Some of the access routes into and out of the settlement could be impacted during an extreme fluvial event. However a route north eastwards towards Merstone remain unaffected by the flood zone extents.

Climate Change

The method of assessment (See Section 5.2) used to assess the potential impacts of climate change in the fluvial domain do not predict that climate change will result in an increase in fluvial flood risk to the settlement of Rookley. This is because the settlement is located in Flood Zone 1.



Potential Surface Water Flow Routes and Ponding Areas

Method

The potential surface water flow routes and ponding areas presented in the SFRA, illustrate areas of predicted flooding greater than 25m² in spatial extent and only flooding which is more than 0.1m deep. This refinement of the TuFLOW model output is necessary so as to establish the primary areas of predicted flood risk. The modelling approach utilises a 5m resolution ground model grid. The TuFLOW model does not incorporate the Southern Water surface water drains or sewers, which during a storm event would provide storage capacity. Southern Water advised that the modelling should assume that the surface water sewer network could accommodate the 1 in 20 year storm. Therefore, the 1 in 20 year rainfall depths for the critical storm were subtracted from the 1 in 100 year (plus climate change) rain fall depths.

The 1 in 100 year (plus climate change) winter profile storm hyetographs (hyetograph refers to a graph presenting rainfall depth over time) were generated by deriving catchment descriptors from the Flood Estimation Handbook CD-ROM (FEH) and applying the FEH Rain Profile Method. The storm durations were determined by the critical drainage pathway lengths in each of the model areas. The model boundaries were determined by the topography, the local watersheds were traced to ensure that all contributing parts of the catchments were included in the model.

Results

The settlement of Rookley is effectively situated on the knoll of a small hill. This is reflected in the patterns of the surface water flow routes which flow outwards from the settlement area in all directions towards the surrounding lower land. A potential flow route is identified to flow eastwards out of the centre of the large site to the south of the settlement.

Surface Drainage and Infiltration SuDS Potential

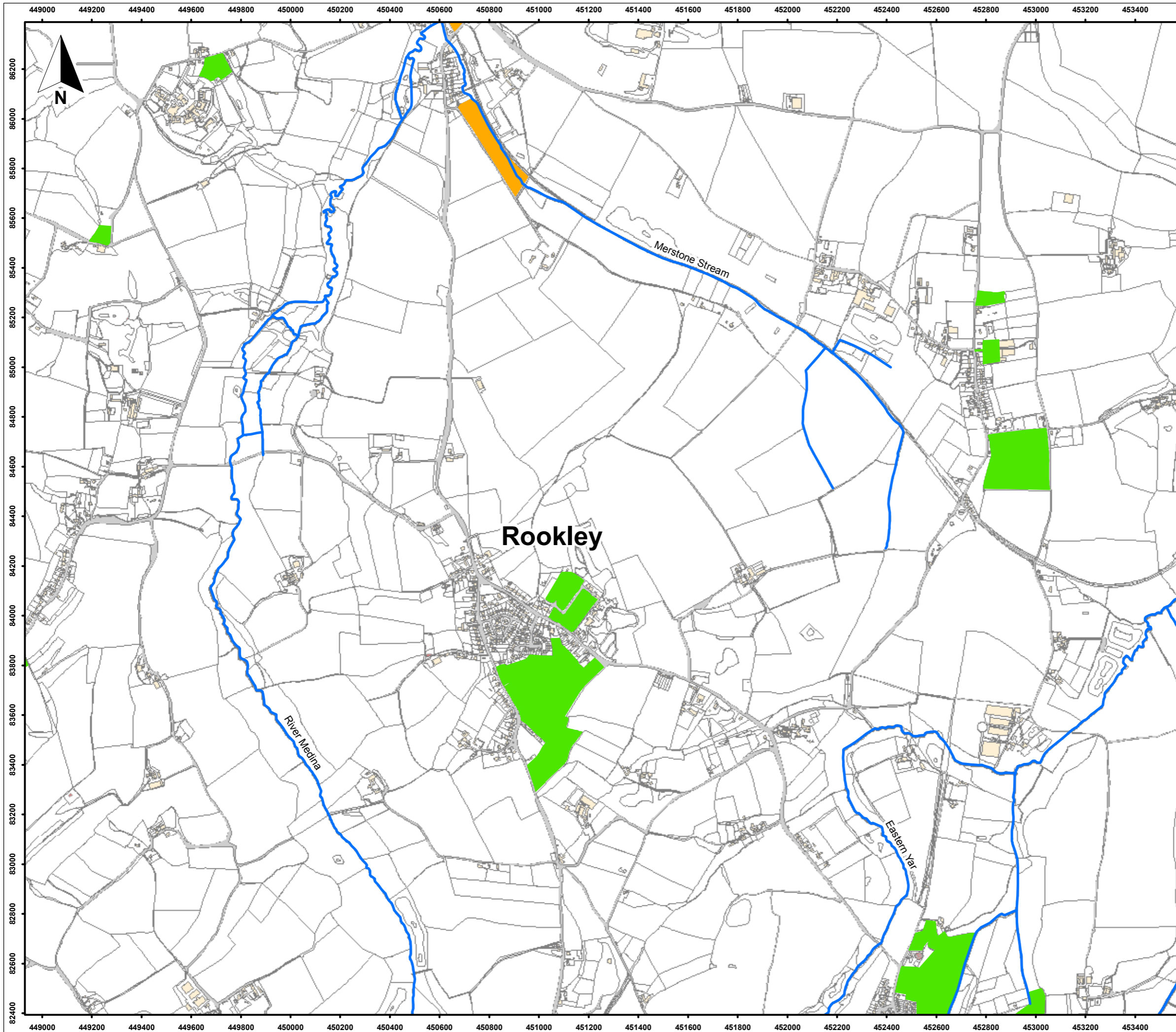
Owing to the local soils and geology Rookley has been identified as being of medium suitability for infiltration SuDS. However, Rookley is located within Source Protection Zones (SPZ) 1, 2 and 3. This means that any surface water drainage scheme in corporate robust pollution prevention measures. The Environment Agency should be consulted on all surface water drainage schemes in Rookley.

Flood Risk Management Guidance and Site Specific FRAs

Being at the top of a surface water drainage catchment, changes in landuse and the permeability of the ground have the influence to directly influence the patterns of surface water flow and the volumes of run-off generated. In line with the requirements of PPS25, all the potential development sites within Rookley are over 1 hectare and should any of them be taken forward, a FRA will be required to demonstrate how the surface water will be managed. PPS25 does not allow for flood risk to be increased elsewhere as a result of development.



Appendix U



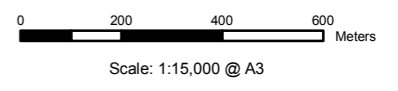
Key:

- Main Rivers

- Probability of Flooding**
- Functional Floodplain
- High Probability
- Medium Probability
- Low Probability

Notes:
 Site is attributed with the flood probability associated with the highest probability flood zone the site intersects

The mapped extent of Flood Zone 3b has been used to identify Functional Floodplain. The 1 in 100 year fluvial flood zone for the present day and the 1 in 200 year tidal extent predicted for the year 2115 has been used to identify sites at a High Probability. The 1 in 1000 year fluvial flood zone for the present day and the 1 in 1000 year tidal extent predicted for the year 2115 has been used to identify sites at a Medium Probability. Sites only in Flood Zone 1 have been assigned a Low Probability



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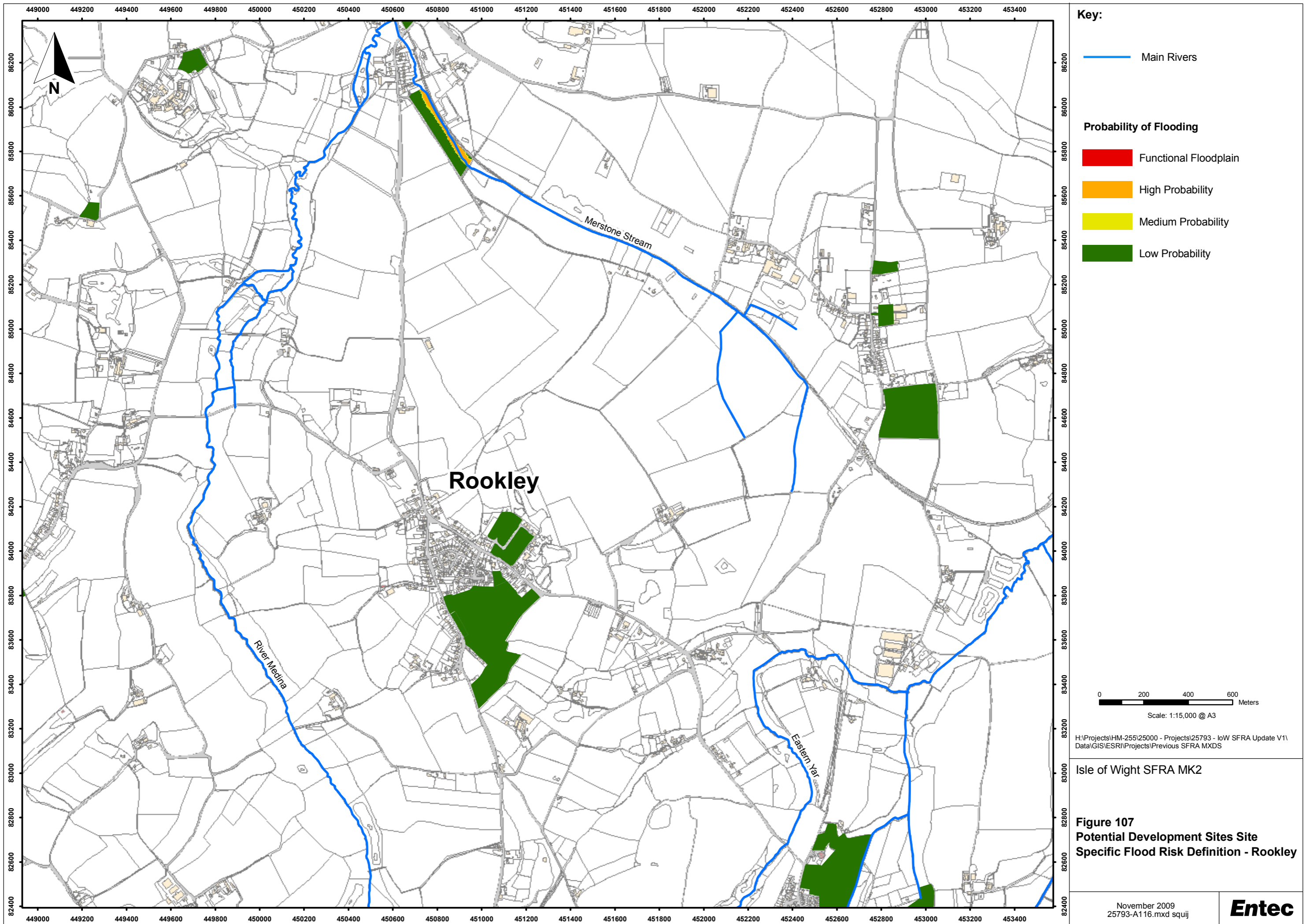
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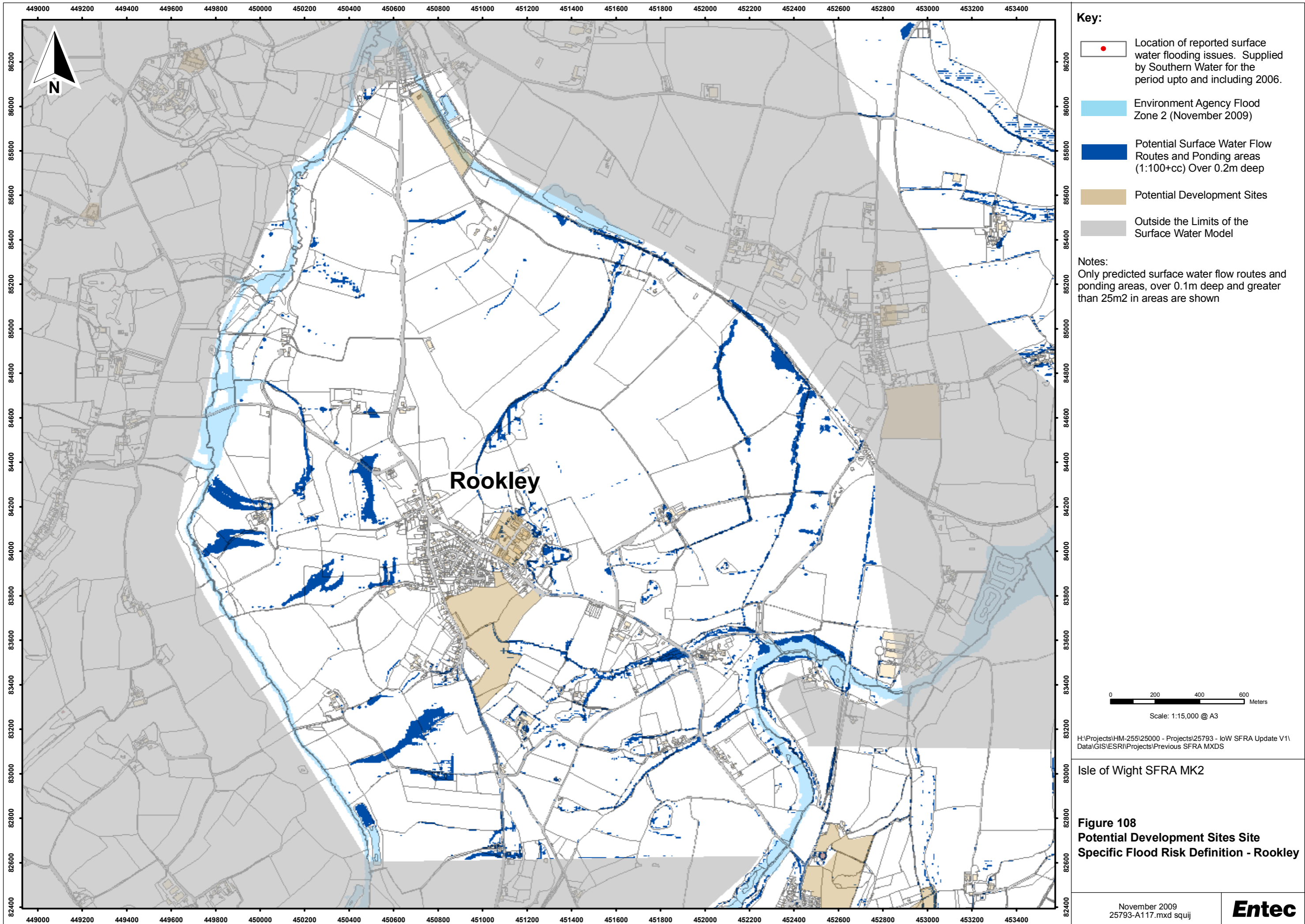
Figure 106
Potential Development Sites
Qualitative Flood Risk - Rookley

November 2009
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Key:

- Location of reported surface water flooding issues. Supplied by Southern Water for the period upto and including 2006.
- Environment Agency Flood Zone 2 (November 2009)
- Potential Surface Water Flow Routes and Ponding areas (1:100+cc) Over 0.2m deep
- Potential Development Sites
- Outside the Limits of the Surface Water Model

Notes:
 Only predicted surface water flow routes and ponding areas, over 0.1m deep and greater than 25m² in areas are shown



Scale: 1:15,000 @ A3

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Figure 108
Potential Development Sites Site Specific Flood Risk Definition - Rookley

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