

Isle of Wight Strategic Flood Risk Assessment MK2

Appendix V Godshill



June 2010



Overview

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

Godshill is located about 7km south of Newport on a north facing slope. The settlement is classified as a Rural Service Centre (RSC), which has been assessed as being completely within Flood Zone 1. Nonetheless, the SFRA identifies that there are two small fluvial watercourses in the north of the settlement for which flood zone extents are not available. All the potential development sites in Godshill are over 1 hectare and as part of any subsequent FRA process, the fluvial flood risk associated with these water courses should be assessed in line with Environment Agency guidance.

Sustainability and Regeneration Objectives

Development within the wider countryside will be focused on the Rural Service Centres (RSC) such as Godshill 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.

Godshill 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 existing development and the potential development sites are within Flood Zone 1. There are however, two reaches of an un-named water course (See Figures 110 and 111) which flow from Godshill northwards towards join the Eastern Yar at Kennerly Farm. The Environment Agency do not hold Flood Zones for this watercourse, it is likely that the drainage area is below 3km², which is the minimum threshold typically applied when modelling flood zones.

As such the two potential development sites situated to the north of the town may in fact be at risk of fluvial flooding which the SFRA has not quantified.

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 Godshill. This is because the settlement is in Flood Zone 1



Appendix V

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

Godshill is situated on a gentle slope with a north, north west aspect, which results in the predicted surface water flow routes running in a roughly north and north westerly direction towards the lower ground of the Eastern Yar floodplain. The higher ground to the south of Godshill is represented in the ground topographic model with Synthetic Aperture Radar (SAR) data, which is of a lower quality than the Light Detecting and Ranging (LiDAR) data present in other parts of the Island. It is the nature of the ground topographic model which has resulted in the large areas of predicted surface water flooding in the area between Godshill and Wroxhall. It would appear that much of the flow generated by the up slope areas is captured by the B road which connects Beacon Alley to Godshill and the A3020. These highways are represented by slight depressions in the topographic ground which results in the flows being channelled along the route of the highway.

There are potentially significant areas of ponding within the centre of Godshill, these do not however correlate with any of the reported incidents provided by Southern Water. The absence of correlation may be a result of surface water flood risk event not having recently occurred or because incidences may not been reported. Moreover, the SFRA surface water modelling does not incorporate details of the underground drainage network, rather an approximate capacity is assumed, please see Section 3.5.



Appendix V

Surface Drainage and Infiltration SuDS Potential

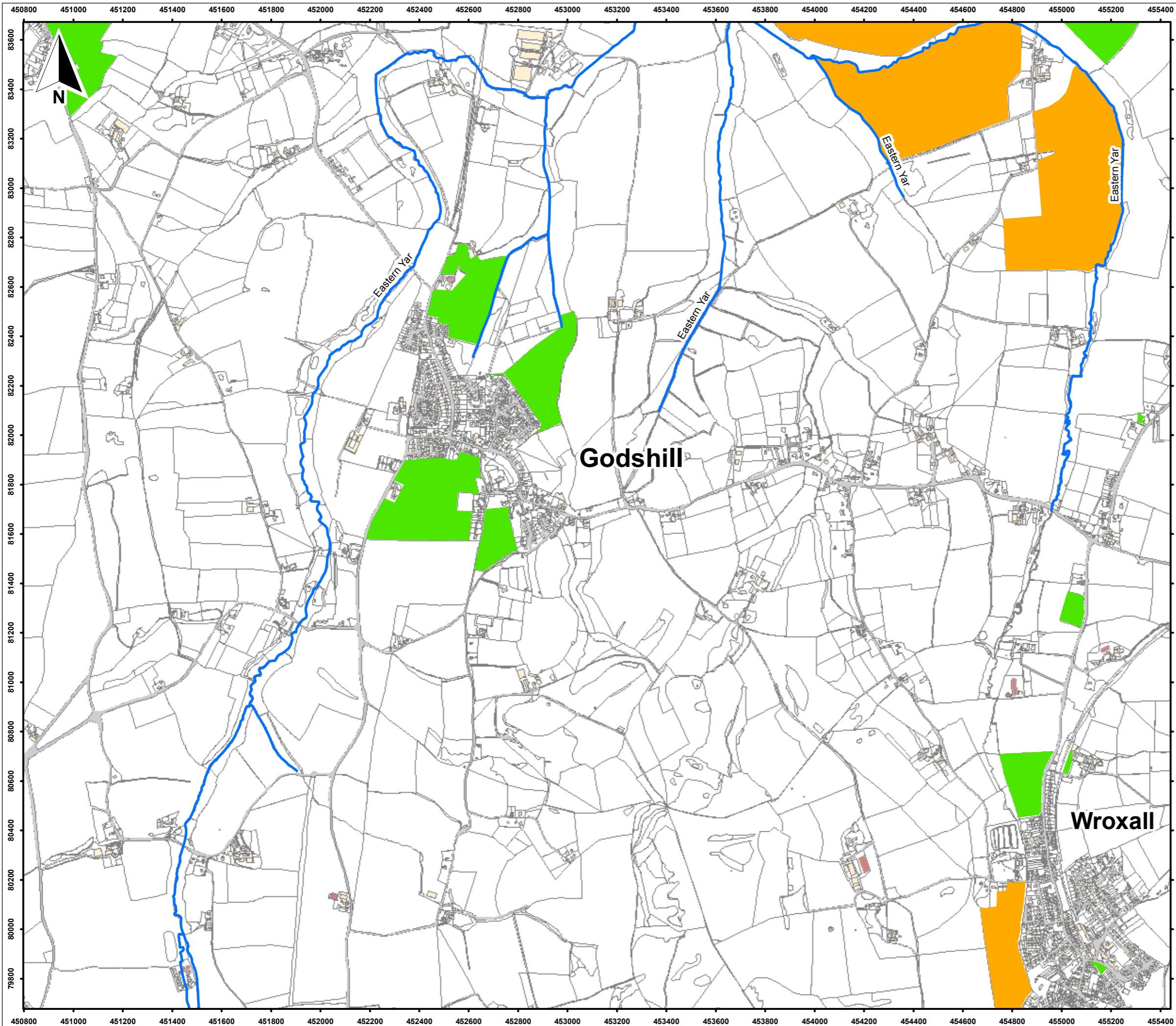
The soils and geology of the area has resulted in whole of the Godshill settlement being classified as having a medium suitability for infiltration SuDS. All the identified sites are located within either Source Protection Zones (SPZs) 1, 2 and 3. The SPZ designation means that pollution control of groundwater resources is fundamental to any drainage solution. The Environment Agency should be consulted on any proposed drainage schemes.

Flood Risk Management Guidance and Site Specific FRA

All the sites within Godshill are in Flood Zone 1, but they are all larger than 1 hectare and the development of any one of the four sites should be accompanied by a FRA, the primary focus of which will need to be the sustainable management of surface water, which takes into account the requirements of PPS25, climate change influences and the potential flow paths and ponding areas identified in this SFRA. As part of the FRA process, the risk posed by the currently un-modelled water courses in the north of the settlement should be assessed and appropriately managed in accordance with the requirements of PPS25.



Appendix V



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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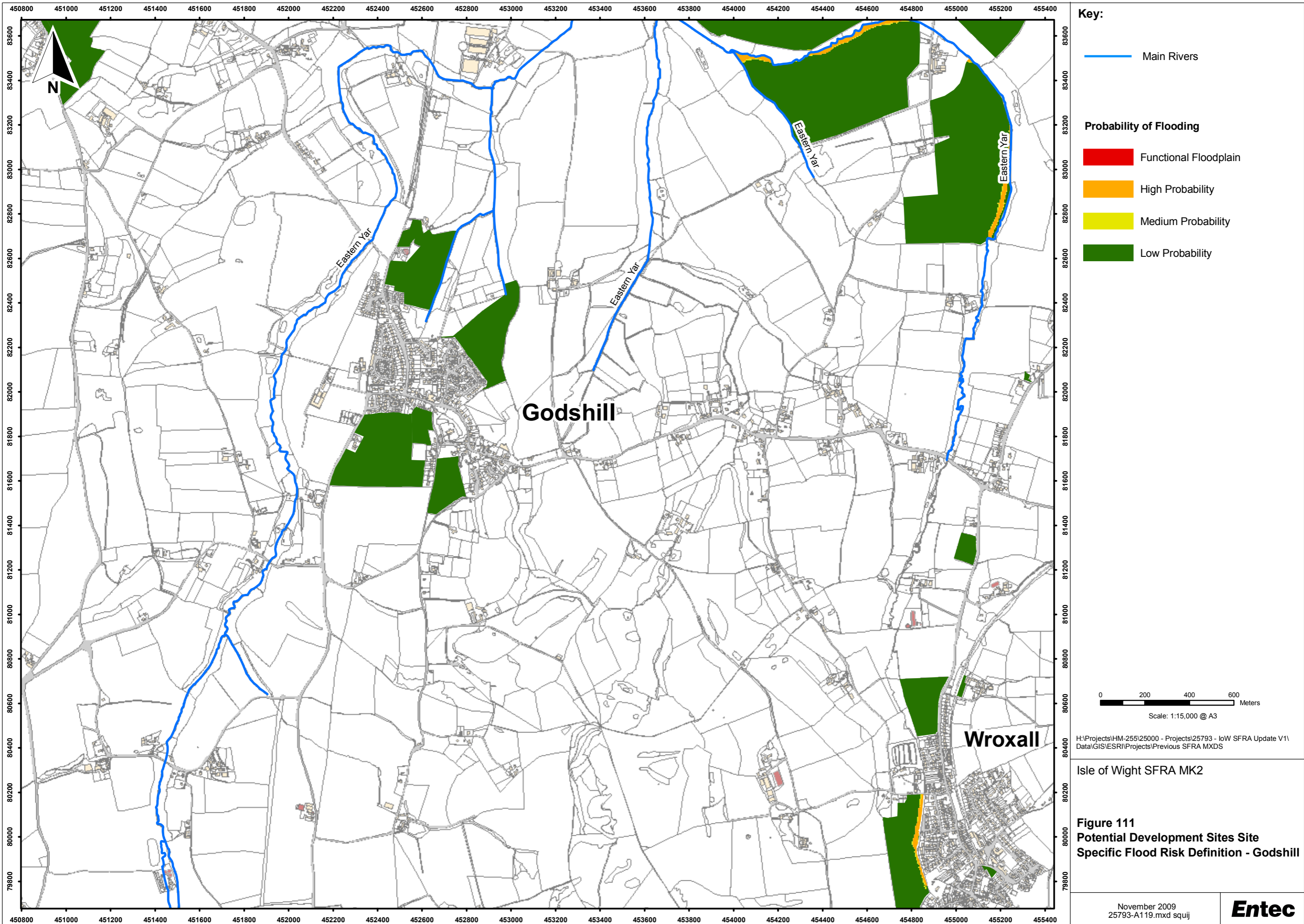
Isle of Wight SFRA MK2

Figure 110
Potential Development Sites
Qualitative Flood Risk - Godshill

November 2009
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Key:

- Main Rivers

Probability of Flooding

- Functional Floodplain
- High Probability
- Medium Probability
- Low Probability

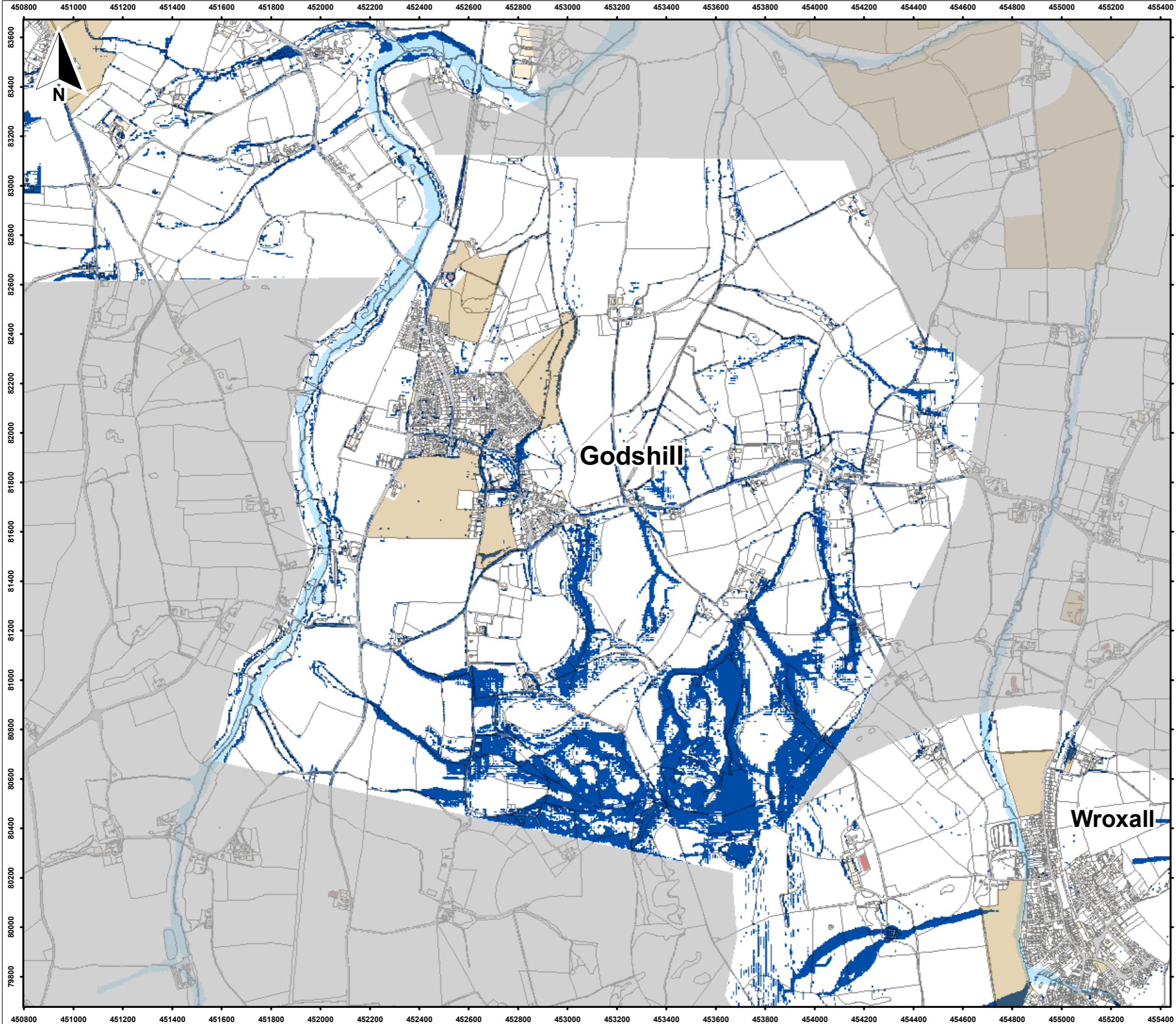
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Figure 111
Potential Development Sites Site
Specific Flood Risk Definition - Godshill

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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



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Figure 112
Potential Surface Water Flow Routes and Ponding Areas (1 in 100 year storm + climate change) - Godshill

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