

Overview

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

The RDA of Wootton is classified as a Rural Service Centre and incorporates the settlements of Wootton and Fishbourne. The RDA is located on the coast between East Cowes and Ryde, with Wootton Creek dividing the two settlements. There are tidal and fluvial flood risks facing this Key Development Area, however only a small proportion of the potential development sites are assessed as being at risk of tidal or fluvial flooding.

Sustainability and Regeneration Objectives

Development within the wider countryside will be focused on the Rural Service Centres such as Wootton 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.

Wootton 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 Wootton are located within Flood Zone 1, the areas of flood plain associated with Wootton Creek have been avoided.

The Isle of Wight Autumn 2000 Flood Investigation Study – (*Wootton Bridge Parish Council Report*) noted that two properties were flooded between the 15th September and 13th December. Large rainfall amounts prior to and during the flood event resulted in high volumes of runoff and an overcharging of the combined foul and storm sewer.

Climate Change

Climate change is predicted to have a relatively small impact on the flood extents in the tidal floodplain as the floodplain is topographically well defined. Nevertheless, flood depths are predicted to increase as a result of climate change.



Appendix O

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 town of Wootton is build over a hill with the eastern half of the settlement being on a south east facing slope and the western half being on a north west facing slope. The potential flow routes reflect these varying slope aspects. Although within the town itself there are only minor potential flow routes predicted. The model predictions do not correlate with the recorded incidents of surface water flooding, which appear to be distributed throughout the eastern half of the town. The recorded flood incident data sets are good indications of potential hot-spots. However, the database is reliant upon the flooding incidents being reported by the public, as such there is a significant potential for database to be incomplete. The absence of a clear correlation between the predicted and the recorded flooding in Wootton is likely to be the result of either an event not having occurred or an event not having been reported. The potential development sites in Wootton are largely unaffected by the potential flow routes and ponding areas.

Surface Drainage and Infiltration SuDS Potential

Soils in the Wootton are characterised by an SPR of 50%, and consequently surface runoff potential is high. Wootton is underlain by areas of Secondary Aquifer and Unproductive Strata. Infiltration potential is classified as predominantly low, with areas of medium infiltration potential associated with the high leaching potential soils. Each potential development site in the Sites Database is assigned a classification for infiltration potential, groundwater contamination and runoff.



Appendix O

Wootton Creek Estuary is designated as an SPA. The presence of a SPA in the estuary necessitates the need for careful mitigation of contaminants in surface water drainage waters. Volumes of discharge into the estuary are likely to be permitted without a limit assuming appropriate mitigation measures for pollution are taken where necessary.

Wave Exposure Risk

The coastline near Sea View has been classified as being at low risk of wave exposure (see Section 6 of the SFRA Report). It is recommended that for any site within the 20m buffer, where ground levels are less or equal to the predicted peak 1 in 200 year tide in 2115 level plus a 4m allowance for wave height, building design should consider the impact of being potentially exposed to airborne beach material and the corrosive effects of sea spray.

Flood Risk Management Guidance and Site Specific FRAs

The principal of avoidance should be applied when considering sites within Wootton. The development of any previously undeveloped site in Flood Zones 2 and 3 is considered by PPS25 as an increase in flood risk and should be avoided. The redevelopment of any previously developed sites within the Flood Zones will require the PPS25 Sequential test to be passed and the Exception Test satisfied where necessary.

Factors to be considered in safe development could include:

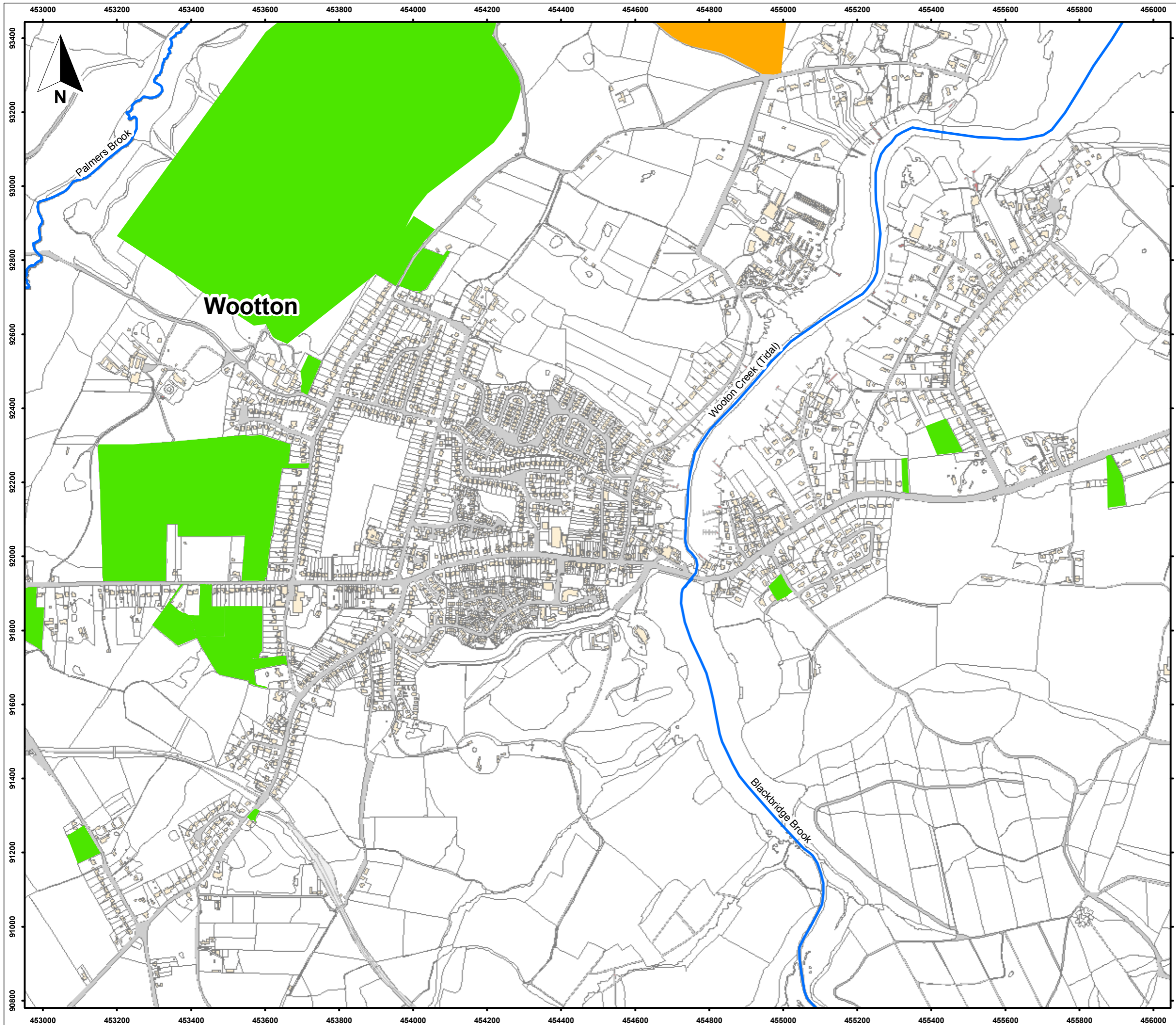
- Ensuring that the sequential approach to landuse planning is, where possible, applied on site. This approach would see more and highly vulnerable landuse types being placed in the lower risk zones.
- Finished first floor levels should be set above the predicted 1 in 100 year fluvial flood levels, plus a climate change allowance and above the 1 in 200 year predicted tide levels for the year 2115. The Environment Agency should be consulted for fluvial flood levels and the Environment Agency should be asked to confirm if the predicted tide levels in Figure 1 in Appendix B are still the most recent predictions. A freeboard allowance should be applied, again the Environment Agency should be consulted on this aspect of the design.
- Buildings should be designed so that safe access and egress can be facilitated in the event of the 1 in 100 year (plus climate change) and 1 in 200 year tidal event (plus climate change).
- Development should not increase the risk of flooding elsewhere. As such, the potential for displaced flood water to impact adjacent areas should be considered. This typically applies if an existing building footprint is being increased in fluvial floodplains and defended tidal floodplains. The displacement of water aspect of development along an undefended coastline is not necessarily a concern.
- Building design should account for the potential depths of water that might occur and appropriate flood resilient and or resistant design features should be incorporated.



Appendix O

- Surface water generated by development should be managed using sustainable techniques. The FRA or drainage assessment should explore the Environment Agency and CIRIA SuDS hierarchy. Discharge rates and volumes should not increase post development, in addition to this PPS25 requirement, the Council and the Environment Agency want to see developers seeking to reduce run-off rates and volumes.





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

0 200 400
 Meters

Scale: 1:10,000 @ A3

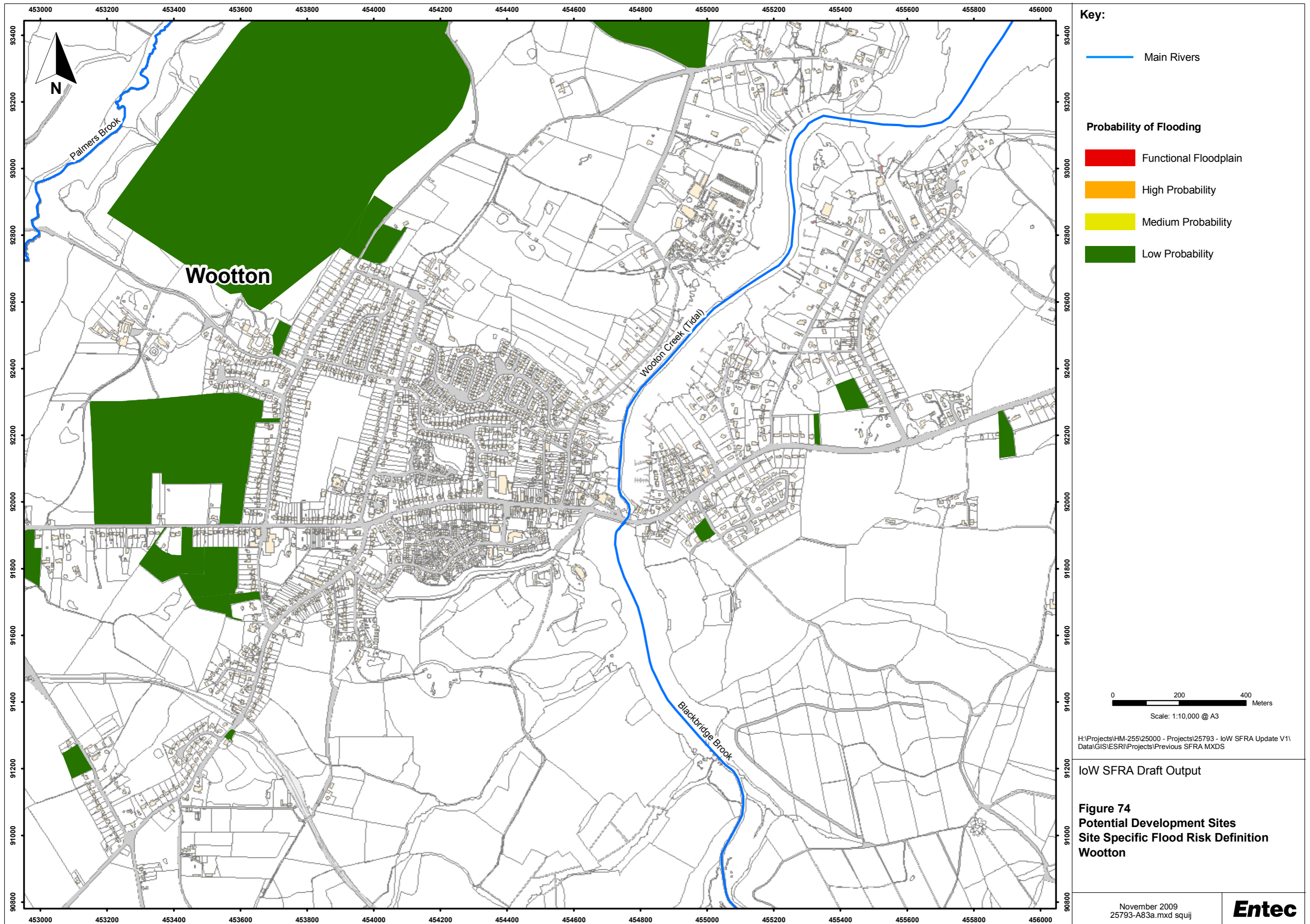
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loW SFRA Draft Output

Figure 73
Potential Development Sites
Qualitative Flood Risk
Wootton

November 2009
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Key:

- Main Rivers

Probability of Flooding

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

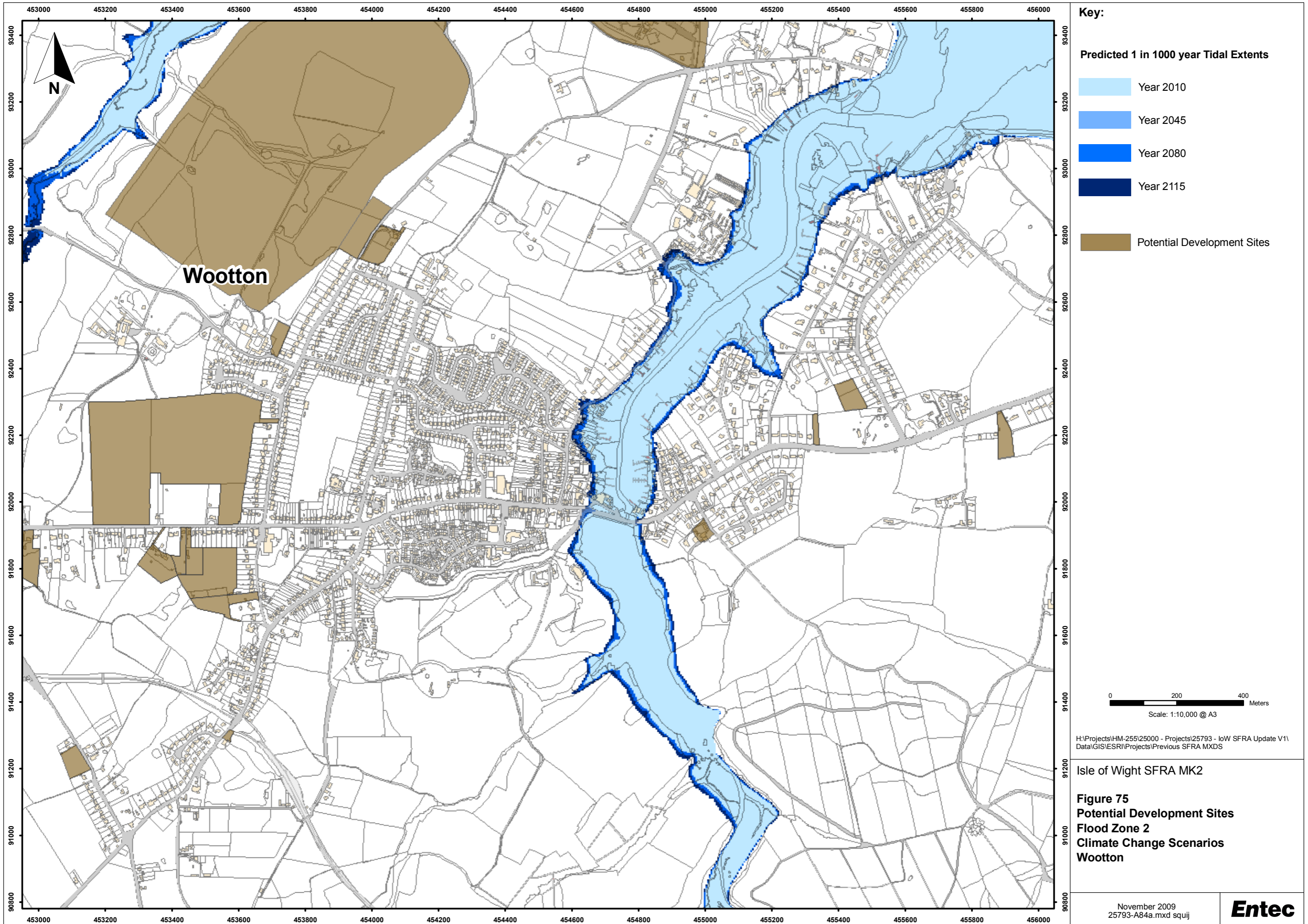
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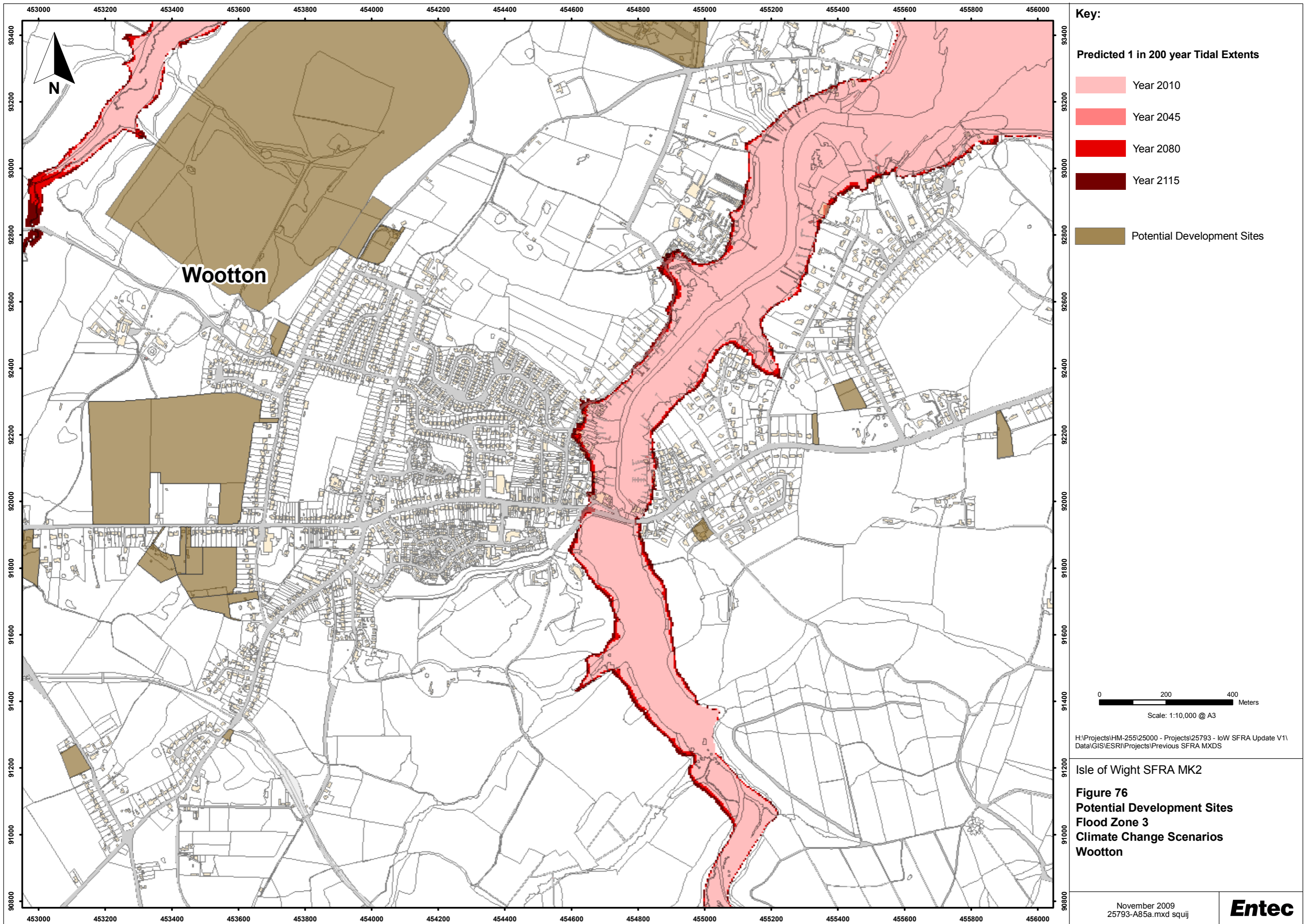
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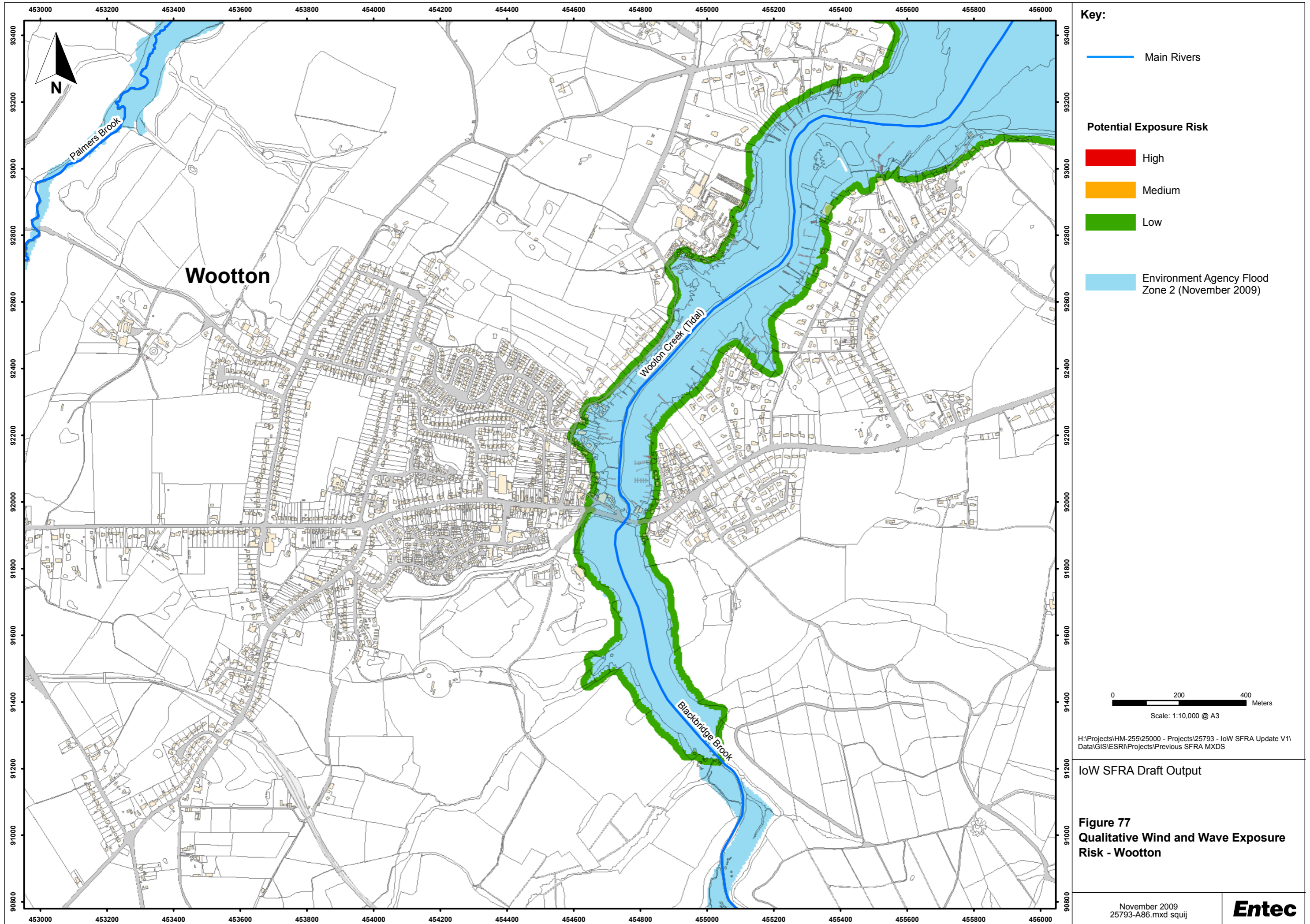
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Figure 74
Potential Development Sites
Site Specific Flood Risk Definition
Wootton

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Key:

- Main Rivers

Potential Exposure Risk

- High
- Medium
- Low

■ Environment Agency Flood Zone 2 (November 2009)

0 200 400 Meters
Scale: 1:10,000 @ A3

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Figure 77
Qualitative Wind and Wave Exposure Risk - Wootton

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