

**OUTLINE APPLICATION FOR
RESIDENTIAL DEVELOPMENT OF 129 DWELLINGS
LAND TO THE NORTH OF
SUTTON BRIDGE**

For



SEQUENTIAL FLOOD RISK COMMENTARY

APPLICATION REFERENCE H18-0824-20

DECEMBER 2020



1. BACKGROUND

- 1.01 The document is prepared in support of an outline planning application for 129 dwellings (including 32 affordable dwellings) at land to the north of Sutton Bridge. During a recent discussion with the Council it is understood that officers are considering refusal of the application due to flood risk concerns. This document seeks to provide an explanation as to why the Council's Strategic Flood Risk Assessment produced in 2017 is not considered up to date.
- 1.02 The current application follows the granting of various planning permissions within the site curtilage which are extant. Application references and approval dates are scheduled in the table below:-

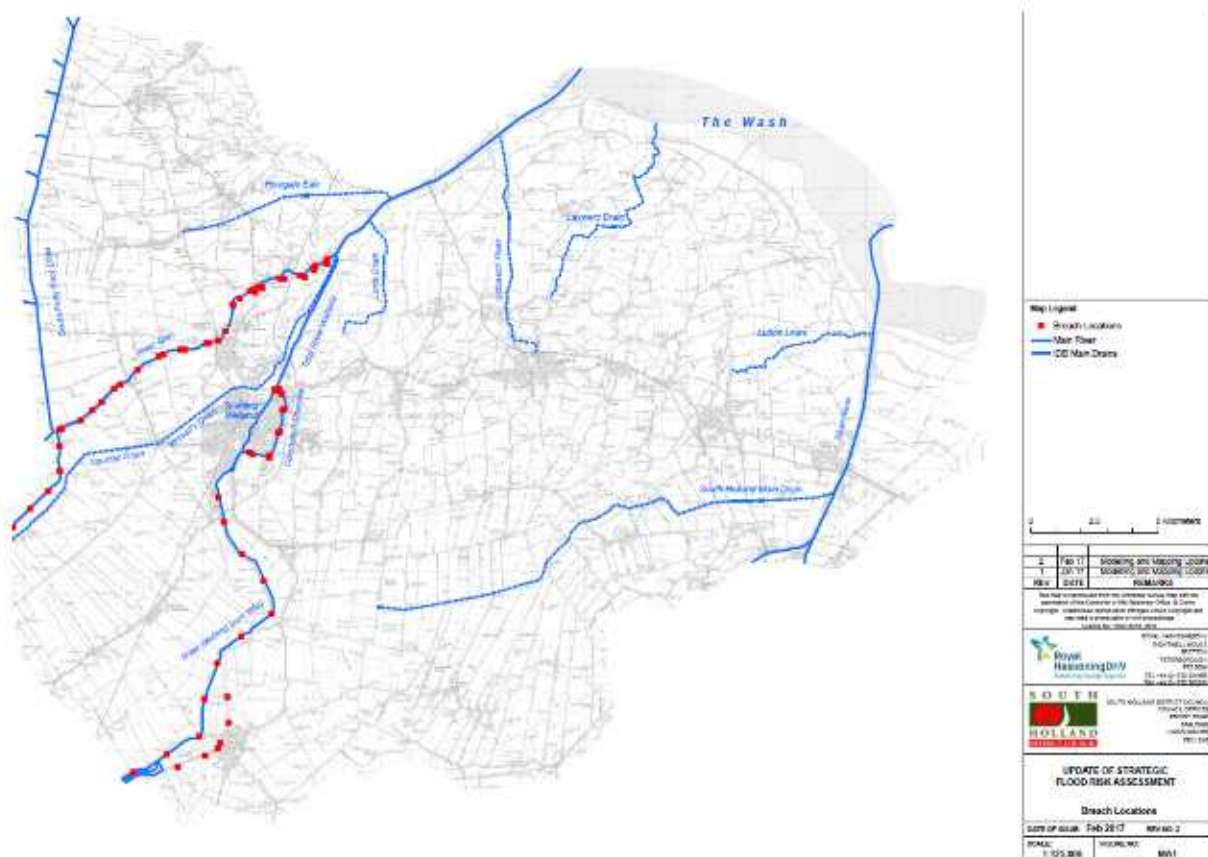
Application Reference	Development	Status
H18-1168-16	Residential Development of 10 dwellings – land north of Withington Street Sutton Bridge	Outline Planning Permission received on 12/05/2017 .
H18-0692-19	Reserved Matters for 10 dwellings – land north of Withington Street Sutton Bridge	Application approved on 15/10/19 and permission extant.
H18-1167-16	Residential development of 6 dwellings – land off Chestnut Terrace Sutton Bridge	Application refused on 07/03/2017 but approved by appeal on 08/12/2017 under appeal reference APP/A2525/W/17/3182341
H18-0709-19	Reserved matters for 6 dwellings – land off Chestnut Terrace Sutton Bridge	Application approved on 07/10/2019 and permission extant.
H18-0435-18	Residential Development of 60 dwellings – land north of Nightingale Way Sutton Bridge.	Outline Planning Permission received on 01/03/2019
H18-1167-19	Reserved matters of 60 dwellings – land north of Nightingale Way Sutton Bridge.	Application approved on 31/3/2020 and permission extant

- 1.03 The South East Lincolnshire Strategic Flood Risk Assessment was adopted in March 2017. It should therefore be noted that all extant permissions on the site post-date the adoption of the strategic flood risk assessment.
- 1.04 The South East Lincolnshire Strategic Flood Risk Assessment would appear to have been informed by the 2016 Update of South Holland Strategic Flood Risk Assessment- Modelling and Mapping Note produced by Royal HaskoningDHV and issued on 28th February 2017.

1.05 The Royal HaskoningDHV report confirms the following:-

- The hydraulic models were generated from 2m resolution LiDAR data. 0.25m, 0.5m LiDAR data was not available within the modelling extents and 1m LiDAR data was not used due to the slow speed in which model data ran (paragraph 4.3).
- The document confirms that the modelling exercise across the South Holland area was combined with outputs from the previous SFRA and the Environment Agency's tidal flood hazard mapping (paragraph 5.1)
- In respect of detailed Residual Mapping for Sutton Bridge the document confirms that 100% reliance was placed on the Environment Agency's Tidal Hazard Mapping.

1.06 Breach mapping provided as part of the Royal HaskoningDHV report confirms that at the time of writing their report Sutton Bridge was not affected by any risk of breach from rivers of IDB main drains.



Royal HaskoningDSV Breach Locations – February 2017

1.07 A Flood Risk Assessment prepared by SEA Structural Engineers has been submitted as part of the current outline application. The report documents the following:-

- Assessed against Table 2 of NPPG the development is classed as 'more vulnerable'
- Based on Environment Agency Flood Risk Mapping Sutton Bridge in its entirety is located within a zone 3 flood risk area.
- The site is located within a flood defended area.
- Table 3 of the Environment Agency flood risk guidance requires a sequential and exception test to be passed.
- As would be expected from the Royal HaskoningDHV 2016 report the mapping used by the Environment Agency is identical to the mapping forming part of the South East Lincolnshire Strategic Flood Risk Assessment.
- The 1 in 1000 year flood event in 2115 is recorded as being a maximum depth of 1.0-1.6m with a maximum velocity of 0-0.3m/second

1.08 The submitted FRA also provides a summary of flood risk from Environment Agency data supplied. The following paragraph is pertinent.

*"The site is within a defended flood plain, as defined in Appendix 1 of the Environment Agency's "Policy and Practice for the Protection of Flood Plains", which is considered to be passive until such time that a flood greater than the defences can withstand occurs. **The likelihood of flooding occurring due to overtopping or failures of the defences is considered to be very low.** The site is located approximately 1.4 km from the tidal section of the River Nene, which is maintained by the Environment Agency. The maps supplied by the Environment Agency predict flood depths of up to 1.6m if a breach were to occur in a 1 in 200 year event in 2115. It is also likely that the EA will undertake further bank raising within the next 100 years to ensure that there is a continuing 1 in 200 year defence to Long Sutton and Sutton Bridge."*

1.09 Environment Agency records (created in December 2018) demonstrate that no part of the application site has been the subject of historic flooding.

Historic Flood Map centred on TF47177 21844 - created December 2018 [Ref: CCN-2018-110730]



Extract from historic flood map from the EA

- 1.10 Appendix C of the South East Lincolnshire Strategic Flood Risk Assessment provides standing advice as to how planning applications will be assessed in flood risk areas. The advice is copied below. It should be noted that the document suggests that the acceptability of Major Development for More Vulnerable Development should be determined in consultation with the Environment Agency. The supporting note reads thus:-

"The environment Agency requires direct consultation on proposals in this hazard zone. The NPPF requires that proposals are accompanied by a Flood Risk Assessment which contains evidence that appropriate mitigation measures / flood resilience techniques have been incorporated into the development. The Environment Agency also wish to be consulted on the Sequential Test evidence. Applicants will need to demonstrate that housing proposals are required to meet an identified local housing need.

The applicant is advised to refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings – Flood Resilient Construction' (DCLG 2007)

Finished Floor Levels (FFL) should be informed by the predicted flood depth maps (refer to the relevant 2115 1% fluvial or 0.5\$ tidal max depth map and set as required below (single storey proposals must use the 0.1% event, 2115 scenario for setting FFL's)"

For flood depths of 1-1.6m the following should be applied

"Proposals must have a minimum of 2 storeys with FFL set a minimum of 1m above existing ground level, flood resilient construction to a height 300mm above the predicted flood depth and demountable defences to 600mm above FFL"

Glossary/Key							
Please refer to the National Planning Practice Guidance (Table 3) for advice on when the Sequential and Exception Tests are applicable	Environment Agency Environmental Permitting Regime distance - any works within 8m of fluvial Main River, or 16m of tidal defences (including culverting or control of flow of any river)	Danger to ALL (Hazard Rating >2)	Danger to MOST (Hazard Rating 1.25 - 2)	Danger to SOME (Hazard Rating 0.75 - 1.25)	Low Hazard (Hazard Rating 0 - 0.75)	Flood Zone 3	Flood Zone 2
Water Compatible (excluding development that includes essential ancillary sleeping or residential accommodation)	Consult EA	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	No Comment	No Comment
Major & Non-major* 'Less Vulnerable' uses, e.g. commercial/industrial development	Consult EA	Consult EA	Appropriate Mitigation	Appropriate Mitigation	No Comment	No Comment	No Comment
Tidal Risk Scenario advice only. New short-let Camping and Caravan Sites (incl. log cabins & chalets) - subject to flood warning and evacuation plan	Consult EA	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation
Fluvial Risk Scenario advice only. New short-let Camping and Caravan Sites (incl. log cabins & chalets) - subject to flood warning and evacuation plan	Consult EA	EA OBJECTS to the principle of development due to risk to life	EA OBJECTS to the principle of development due to risk to life	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation
Change of Use - Less Vulnerable to More Vulnerable or within More Vulnerable category, involving increase in risk to people - please see note for other categories & exclusions	Consult EA	Consult EA	Consult EA	Appropriate mitigation	Appropriate mitigation	No Comment	No Comment
Non-major* 'More Vulnerable' uses, including residential development & residential holiday accom. (less than 10 dwellings/units or less than 0.5ha in size), except short-let caravan sites - see A5 & A6 above	Consult EA	Consult EA	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	No Comment	No Comment
Major* 'More Vulnerable' uses including residential development & residential holiday accom (not including camping/caravan sites) - greater than 10 dwellings/units or 0.5ha in size	Consult EA	Consult EA	Consult EA	Consult EA	Consult EA	Consult EA	No Comment
Essential Infrastructure	Consult EA	Consult EA	Consult EA	Consult EA	Consult EA	Consult EA	No Comment
Highly Vulnerable* uses, e.g. caravans, mobile homes and park homes intended for permanent residential use - With the Exception of buildings and infrastructure explicitly for use in emergencies (which should be referred to the EA for bespoke advice)	Consult EA	Object - Contrary to NPPF	Object - Contrary to NPPF	Object - Contrary to NPPF	Object - Contrary to NPPF	Object - Contrary to NPPF	Consult EA
* definition taken from T&CP Direction 2009							

Appendix C of South East Lincolnshire Strategic Flood Risk Assessment

- 1.11 The Environment Agency have been consulted on the application and on 29th October 2020 raised no objection to the application subject to the inclusion of the following planning condition.

Condition The development shall be carried out in accordance with the submitted flood risk assessment (ref: 1886/S – 002) dated August 2020 and the following mitigation measures it details:

- ☐ Finished floor levels shall be set no lower than 1 metre above the existing ground level.
- ☐ Flood resilient construction shall be used up to a height of 300mm above the predicted flood depth, with demountable defences to 600mm.
- ☐ Properties shall be a minimum of 2-storey.

Reason To reduce the risk of flooding to the proposed development and future occupants.

These mitigation measures shall be fully implemented prior to occupation and subsequently in accordance with the scheme's timing/phasing arrangements. The measures detailed above shall be retained and maintained thereafter throughout the lifetime of the development.

- 1.12 The Environment Agency have therefore accepted in full the flood risk assessment, and sequential test supplied as part of the planning application.

2. DISCUSSION

- 2.01 The current application site was put forward as part of the South Holland Strategic Housing Land Availability Assessment and known as sites Sub 016 and Sub 024. The sites were not taken forward as the Council believed that when assessed against their 2017 South East Lincolnshire Strategic Flood Risk Assessment a site on the southern side of Bridge Road was sequentially more preferable.
- 2.02 The South East Lincolnshire Local Plan was adopted on 8th March 2019. A single site in Sutton Bridge, referred to as Sub027, was allocated within the Local Plan with the intention on delivering 210 dwellings over the plan period. The identified housing requirement for Sutton Bridge over the plan period is 273 dwellings. The Council have therefore concluded that irrespective of the settlement and its wider area being located within a zone 3 flood risk area that Sutton Bridge is capable of substantial new housing development.
- 2.03 The applicant has consistently disputed that the allocated site located to the south of Bridge Road performs better sequentially in flood risk terms to the application site. The Council's sequential assessment has been assessed against LiDAR data of an unknown age but certainly pre-dating 28th February 2017. This LiDAR data is not only aged, but the data set was based on the widest possible resolution. A review of Government information (last updated on 20th May 2020) indicates that the latest LiDAR composite DTM modelling (2m) produced by the Environment Agency was produced in 2019. Information States:-

"The LIDAR Composite DTM (Digital Terrain Model) is a raster elevation model covering >85% of England at 2m spatial resolution. Produced by the Environment Agency in 2019, this dataset is derived from a combination of our Time Stamped archive and National LIDAR Programme, which has been merged and re-sampled to give the best possible coverage. Where repeat surveys have been undertaken the newest, best resolution data is used. Where data was resampled a bilinear interpolation was used before being merged.

The 2019 LIDAR Composite contains surveys undertaken between 12th March 1998 and 1st September 2019. Please refer to the survey index files which shows, for any location, what Time Stamped survey or National LIDAR Programme block went into the production of the LIDAR composite for a specific location.

The DTM (Digital Terrain Model) is produced from the last return LIDAR signal. We remove surface objects from the Digital Surface Model (DSM), using bespoke algorithms and manual editing of the data, to produce a terrain model of just the surface. Available to download as GeoTiff files in 5km grids, data is presented in metres, referenced to Ordnance Survey Newlyn, using the OSTN'15 transformation. All LIDAR data has a vertical accuracy of +/-15cm RMSE."

- 2.04 It should be noted therefore that even if the Strategic Flood Risk Assessment utilised current LiDAR modelling there is a margin of error of **+/- 150mm**. The margin of error for LiDAR mapping prior to the latest 2019 update is unknown. The margin of error is significant when assessing sites with relatively flat topography. Whilst it is accepted that large scale mapping of this nature can only realistically use this type of modelling data any judgements made, particularly when considering site specific sequential assessments, should make allowances for the margin of error within the data sets of the Council's Strategic Flood Risk Assessment and in our view should also reflect on any additional site specific information which is proven to be more accurate.
- 2.05 Data obtained from the Defra Spatial Data Download would suggest that mapping used to inform the Strategic Flood Risk Assessment could potentially date back to 2014 using the Environment Agency's SurfZone Digital Elevation Model 2014. This confirms that 2m spatial resolution is used but does not confirm the accuracy of its data at that time. The document states only that *"Using the best available LIDAR and near-shore multibeam SONAR bathymetry available at the time, it is the best currently available Digital Elevation Model (DEM) covering the inter-tidal zone produced by the Environment Agency"*
- 2.06 With the exception of the initial outline planning applications at Withington Street (H18-1168-16) and Chestnut Terrace (H18-1167-16) all subsequent planning applications (including Reserved Matters applications for the two sites referred to) have been prepared using topographical survey prepared using calibrated surveying equipment. This equipment utilises Global Navigation Satellite System receivers to provide accurate level information relative to ordnance datum. Survey information produced for the site is therefore more accurate than LiDAR data based on 2m resolution.
- 2.07 As previously identified all historic applications located within the curtilage of the current application site were approved following the adoption of the South East Lincolnshire Strategic Flood Risk Assessment. In order for them to be considered acceptable a sequential and exception test needed to be passed. This is particularly pertinent to the approved proposal for 60 dwellings on land located off Nightingale Way (H18-0435-18) and we would reference the case officer's delegated report for this particular application. In assessing flood risk the officer reported:-
- *"A Flood Risk Assessment and Drainage Strategy have been provided, which show the site is safe from flooding and that there will be no impact on other land uses or land users. The proposal will incorporate a sustainable drainage system, which will ensure surface water run-off is limited to Greenfield run-off rates."*
 - *Although the site lies within Flood Zone 3, the hazard mapping for the area in the updated South Holland Strategic Flood Risk Assessment shows that the site is **sequentially preferable than other sites being promoted in the emerging Local Plan.***
 - *The Environment Agency has no objection on the basis that conditions are imposed. This is considered acceptable."*

We struggle to understand how the Council's position could be any different to the officer views provided above given that the only difference between the approved application and current application is that it utilises a larger land area.

- 2.08 The current outline application contends that if the Council accept that the topography of the land approved as part of application H18-0435-18 is similar to the balance of land located to the east then the Council must accept that based on the new and more accurate data available to them the entire site must be sequentially preferable to the site allocated within the South East Lincolnshire Local Plan.
- 2.09 Paragraph 55 of the Design and Access Statement submitted as part of the current outline application provides a table comparing levels across the previously approved sections of the application site. This is repeated below.

PLANNING REF	LOCATION	RANGE OF SITE LEVELS (AOD)	Av. SITE (AOD)	Min FFL APPLIED TO PERMISSION
H18-1167-16	Land East of Chestnut Terrace	3.37 - 4.27	3.38	4.50
H18-1168-16	Land off Withington Street	3.44-3.72	3.50	4.90
H18-0435-18	Land off Nightingale Way	3.31-3.80	3.50	4.35

- 2.10 A review of the existing site topography for land not having the benefit of any established planning permission reveals a level range of 3.32AOD – 4.04AOD. The median level range across the site is 3.35m-3.49m AOD
- 2.11 When undertaking a comparison of the site's topography with the approved development off Nightingale Way it is apparent that the topography is similar. A low point on the field north of Nightingale Way is recorded as 3.32m AOD and the highest recorded level recorded as 3.70 AOD in the north east corner of the site. As noted in the table above the median level across the site ranges from 3.39m – 3.80m AOD
- 2.12 The proposed finished floor levels proposed as part of the current outline application are comparable to the existing approved schemes. Finished floor levels on the section of site without the benefit of any extant permission range between 4.35m AOD and 4.50m AOD.
- 2.13 It must follow therefore that if the Council are content that the sections of the site that have the benefit of extant permissions are considered to be safe for the lifetime of the development, that this must also be true for the remaining 41% of the development that does not have the benefit of a permission.

- 2.14 In respect of Sutton Bridge the South East Lincolnshire Strategic Flood Risk Assessment uses only the Environment Agency's Tidal Hazard Mapping as its evidence base. The mapping makes clear that *'the potential flooding consequences shown on the mapping primarily relate to flooding from the sea and main rivers taking into account the presence of current flood risk management measures such as flood defences.'* Mapping for Sutton Bridge in 2115 with 0.1% Event Probability show the entire area of Sutton Bridge and its surroundings being at Medium or High probability of flooding. We would suggest that in this scenario it is impossible to conclude anything other than the Environment Agency would undertake improvement works on flood defences to protect the entire settlement.

3. SUMMARY

- 3.01 The South Holland Strategic Flood Risk Assessment, adopted in March 2017, post dates all extant planning permissions on the site and it follows therefore that the document should have been a material consideration in the determination of all schemes previously approved. This is particularly relevant to the most recent major planning application approved at land off Nightingale Way (H18-0435-18)
- 3.02 In respect of Sutton Bridge the South East Lincolnshire Strategic Flood Risk Assessment relied solely on hazard mapping supplied by the Environment Agency.
- 3.03 The Environment Agency hazard mapping is modelled using LiDAR data. The Environment Agency acknowledge that based on 2m resolution the LiDAR data has a margin or error of +/- 150mm. It is a matter of fact that topographical survey information physically recorded on the ground is more accurate than LiDAR data.
- 3.04 The proposed use of the site is classified as 'more vulnerable' assessed against Table 2 of NPPG. The application proposes major development.
- 3.04 Levels on sections of land already having the benefit of planning permission are similar to site levels on the section of land without the benefit of any permission.
- 3.05 The Council have previously agreed that the approved housing scheme on land located off Nightingale Way was sequentially preferable to the site sub027 which is allocated in the South East Lincolnshire Local Plan.
- 3.06 Appendix C of the Strategic Flood Risk Assessment requires the Council to consult with the Environment Agency when considering 'more vulnerable' major development.
- 3.07 The Environment Agency have been consulted on the proposals and raised no objection to the scheme subject to the imposition of a model condition on any approval. As such the Environment Agency have accepted the sequential and exception tests have been passed.

- 3.08 Under the circumstances if the Council consider there to be grounds for flood risk concern they are clearly ignoring the advice of their statutory consultee. Moreover, they are reliant on the Council's Strategic Flood Risk Assessment which as far as Sutton Bridge is concerned is based on flood hazard mapping produced by the Environment Agency. The issue to be determined is whether this mapping should be considered more accurate (noting the accepted margin of error) when assessed against a site specific flood risk assessment utilising accurate on-site recorded survey information based on Ordnance Datum.

4. FLOOD RISK PLANNING POLICY IMPLICATIONS

- 4.01 The above analysis has implications for how the planning policy framework is to be applied in this case.
- 4.02 In accordance with s38(6) of the Planning and Compulsory Purchase Act 2004, the determination is to be in accordance with the development plan unless material considerations indicate otherwise.
- 4.03 Policy 4 of the South-East Lincolnshire Local Plan sets out development plan flood risk policy. The Plan was examined between October 2017 and April 2018, being adopted in March 2019. The evidence base underpinning Policy 4 is the Strategic Flood Risk Assessment published in March 2017; this is made clear within the commentary to Policy 4. As already noted, all of the extant planning permissions listed in the table at 1.03 above were granted after the publication of the Strategic Flood Risk Assessment. In order for those permissions to be granted, the LPA will have had to consider flood risk, and will have concluded that the proposed developments passed the flood risk sequential test for the location of development (which already existed in policy through the NPPF). Those approved developments now comprise the majority proportion of the development proposed in the current application. There is no new or additional flood risk evidence that suggests a different conclusion should now be reached in relation to those approved parts of the overall development now proposed.
- 4.04 As the net additional area of land proposed for development has been demonstrated to have the same flood risk characteristics as the parts already approved, it follows that there cannot be technical conflict with Policy 4 in relation to that net additional area.
- 4.05 Even if one were to take the view that all of the current application should be the subject of assessment under Policy 4, without regard to the planning history, it is clear that the site-specific assessment of flood risk that has been undertaken should be preferred to the SFRA. The site-specific assessment is based upon ground level topographical survey, whereas the SFRA was based upon data gathered by aerial survey only. It is self-evident that the site-specific data is more robust. Indeed, with the clear benefit of site-specific levels data and analysis, the application site compares favourably with the single site allocated within the development plan.

- 4.06 Sutton Bridge is identified as a sustainable settlement within the development plan. The commentary to Policy 4 notes that "as the area covered by the flood zones is extensive in the Local Plan area, it was not possible, consistent with wider sustainability objectives, for all development to be located in zones with a lower probability of flooding. Many of the areas of land at lowest risk of flooding are in isolated areas, unrelated to settlements. Satisfying housing need in the most sustainable existing communities has therefore necessitated the need for a different approach to the distribution of growth to meet housing need". It follows that any application of the sequential test should be applied to Sutton Bridge only, which is surrounded by land in Flood Zone 3. The site-specific flood risk assessment demonstrates that the application site is an entirely appropriate location for development within that context.
- 4.07 In applying the planning balance to this application, the development plan is the starting point and in respect of flood risk specifically Policy 4. We consider that the only respect in which there is the possibility of conflict with the policy is in relation to sequential testing. In reality, we consider that on a sensible application of the policy the sequential test should be limited to Sutton Bridge - if it were not then with the exception of an allocated site that is showing no convincing signs of delivery, the sustainable settlement of Sutton Bridge may deliver no significant development at all.
- 4.08 In any event, there are very weighty material considerations that outweigh any conflict with Policy 4, namely:-
- The grant of planning permission for residential development of the majority of the scheme currently proposed
 - The fact that these permissions were granted with the SFRA in place
 - The application site compares favourably with the Local Plan allocated site in flood risk terms
 - The overall design benefit of delivering a comprehensive rather than piecemeal development at the northern edge of the settlement
 - The contribution that the net additional housing over and above that already approved will make to the Government policy of boosting the supply of housing at a sustainable settlement and
 - The ability for the whole of development to be accessed without reliance upon Withington Street.