

## 3. Exception Test

When the Sequential Test has been applied, and no reasonable alternative sites can be identified at a lower flood risk, the Exception Test is applied. The Exception Test is used to determine where departures from the Sequential Test are justified by the need to locate development in higher risk zones, in order to meet the wider aims of sustainable development. PPS25 acknowledges that flood risk is one of many issues (including transport, housing, economic growth, natural resources, regeneration and the management of other hazards) which need to be considered in spatial planning.

The Exception Test is "only appropriate for use when there are large areas in Flood Zones 2 and 3, where the Sequential Test alone cannot deliver acceptable sites, but where some continuing development is necessary for wider sustainable development reasons, taking into account the need to avoid social or economic blight and the need for essential infrastructure to remain operational during floods."

There are three elements to an Exception Test, all three elements have to be passed before development is allocated or permitted. For the Exception Test to be passed:

- d. It must be demonstrated that the development provides wider sustainability benefits to the local community that outweigh flood risk, informed by an SFRA, where one has been prepared. If the Development Plan Document (DPD) has reached the 'submission' stage see Figure 4 of PPS12: Local Development Frameworks the benefits of the development should contribute to the Core Strategy's Sustainability appraisal.
- e. The development should be on developable previously developed land or, if it is not on previously developed land, that there are no reasonable alternative sites on developable, previously developed land; and
- f. A Flood Risk Assessment must demonstrate that the development will be safe, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

### 3.1 **Proposed Development and the Exception Test**

As discussed in Section 2.2.4 the refurbishment of the Bury Street and Charter Area proposes the redevelopment of the Cargo and Somerfield stores for more modern shopping units on the ground floor with a new library and health centre above with the option for a hotel, offices and/ or flats. The placement of residential on the first floor residential in Flood Zone 3a is needed so that new development is not directly inundated during flood events. The purpose of the Exception Test is to consider how flood risk can be managed and allow the necessary development to be safely implemented.

### 3.1.1 Part (a) of the Exception Test

As part of the Sustainability Statement, the Vale of White Horse District Council scored the proposed refurbishment of Bury Street and Charter Area against 21 sustainability objectives to get an overall assessment of the sustainability implications, see Table 3-1. The scoring in the appraisal table is based on a positive effect (+), a negative effect (-), no effect (0) and an indeterminate effect (~).

The effect on sustainability objective No. 19 "reduced risk of flooding" is classed as indeterminate. The introduction of new residential dwellings and/ or hotels would score negatively. However, the Bury Street and Charter Area should be refurbished with flood risk mitigation measures incorporated into the design, such as locating more vulnerable uses (housing and health centre) from ground floor locations to upper levels. Therefore, post development the sustainability score on "reduced risk of flooding" should be at a minimum 0, if not positive.

Overall, the refurbishment of this area will have economic and social benefits and negative traffic impacts will be mitigated by its central location. Many criteria are indeterminate at this

stage and will depend on the final content and design of any development package. A new library and health centre should lead to positive impacts<sup>19</sup>.

	Table 3-1	Sustainability	Appraisal <sup>20</sup>
--	-----------	----------------	-------------------------

Sustainability Objective	Sustainability Score
1. Access to decent, sustainably constructed and affordable homes	0
<ol><li>Improved accessibility to high quality services and involvement in decision making for the public</li></ol>	0
<ol> <li>Improved community safety: Congestion on strategic road network;</li> </ol>	+
4. Increased quality of life for Vale residents	+
5. Raised educational achievement and skills levels	+
6. Establish a strong and sustainable economy within the Vale	+
<ol><li>Establish a dynamic, diverse and knowledge based economy with high value and low impact activities</li></ol>	~
8. Develop a strong and sustainable tourism sector	~
9. Reduced road congestion and associated pollution	~
<ol> <li>Reduced poverty and social exclusion with disadvantaged groups achieving potential</li> </ol>	~
11. Creating vibrant communities	+
12. Greater engagement in cultural activity	0
13. Improved health and wellbeing	+
14. Improve and protect the natural environment (including biodiversity)	~
15. Improve and protect the built environment	~
16. Sustainable use of land, buildings and resources	+
17. Effective action on climate change	+
18. Increased generation of energy by renewables	~
19. Reduced risk of flooding	~
20. Maintained and improved river quality and water resources	-
21. Reduced air, noise and light pollution	-

### 3.1.2 Part (b) of the Exception Test

The refurbishment is proposed on previously developed land and there are no other reasonable available sites which fulfil the same function.

### 3.1.3 Part (c) of the Exception Test

To satisfy part (c) of the Exception Test, it must be demonstrated that the development will be safe, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall. At this stage the assessment of the flood risk is based on the evidence available in the SFRA and the outline details describing the redevelopment proposals. A full flood risk assessment will be required in support of planning applications within the site at the appropriate juncture. At this stage an outline assessment will be made to identify the headline issues so that these can appropriately influence subsequent layout design and details.

#### **Sources of Flood Risk**

The following rivers have been identified as a source of fluvial flood risk for Abingdon Town within the SODC & VOWH SFRA:

River Thames

<sup>&</sup>lt;sup>19</sup> Vale of White Horse (2009) Sustainability Statement Regarding the Additional Consultation on Options for the Core Strategy 2006-2026, pp 8

<sup>&</sup>lt;sup>20</sup> As above

- River Ock
- Larkhill Stream / Wildmoor Brook
- Radley Park Ditch
- River Stert/ Penn Stream

The main source of flood risk to the proposed development area is from the River Stert. The historic and predicted flooding from the River Stert affecting the proposed development is discussed in the following paragraphs.

#### **River Stert- Historic flooding**

The Stert rises to the north of Abingdon and approximately 50% of the catchment is urban. The watercourse alternates between open channel and culvert. It is now designated as Main River from the location where it is crossed by the A34. There have been several incidents of historic flooding in Abingdon as a result of high magnitude flows in the River Stert resulting in the banks overtopping or as summarised in Table 3-2. It should be noted that the only event to cause flooding within the town centre occurred in 1913.

Date	Rainfall	Description of flooding
1913	43mm in 2 hours. Rainfall return period (from 1986 report) = 1 in 65 years.	Summer thunderstorm. 3 feet deep in Stert Street due to culvert surcharging. Flooding was also recorded at Broad Street and Queen Street. <sup>21</sup>
July 1968	Wet antecedent conditions. 60-75mm in 18 hours. Rainfall return period (from 1986 report) = 1 in >50 years.	50-60 properties flooded along open channel section (Hillview Rd to Lammas Court) Approx 24 properties flooded internally to depth of 18". Subsequent improvements made to channel.
1969	Not analysed	50-60 properties affected, but flood levels lower than 1968.
May 1983	Not analysed	Minor flooding to gardens, Northcourt Rd.
Dec 1985	Wet antecedent conditions. Rainfall return period 1 in 1 year.	Channel through Long Furlong development acted as a balancing pond. No flooding downstream.
Feb 2001	Flash floods	Farm Road area
Jan 2003	Prolonged heavy rain	Sellwood Road area
July 2007	Prolonged heavy rain and antecedent conditions	Hillview Road, Farm Road, Sellwood Road, Brookside, Tatham (Sic Road) and Northcourt Road

#### Table 3-2: Historic Flooding from River Stert

#### **River Stert - Hydraulic Model and Hazard Mapping**

As part of the SFRA, an ISIS 1D model was constructed of the Stert (south of the A34 to the confluence with Thames) and the Penn (headwaters to its confluence with Stert). The model included the storage areas at Tilsley Park, all significant structure along the Stert, and the Stert culvert.

The 1D model was "coupled" with a TUFLOW 2D model of central Abingdon. This was done to enable modelling of overland flow of flood waters unable to enter the culvert, as well as water exiting from surcharged manholes along the culvert itself. The modelled results enabled the calculation of flood hazard. Following the formula set out in the Defra "Flood Risk to People" R&D study a hazard score was calculated with values ranging from low to extreme as described in Table 3-3. The results of the hazard analyses have been illustrated in maps appended to this report.

**JBA** consultina

<sup>&</sup>lt;sup>21</sup> Abingdon walks (2008), "Terrific storm 1913" http://www.abingdonwalks.co.uk/flood/1913.php

Hazard Score d x (v + 0.5)	Degree of Flood Hazard	Description
< 0.75	Low	Caution "Flood zone with shallow flowing water or deep standing water"
0.75 - 1.25	Moderate	Dangerous for some (i.e. children, the elderly or the infirm) "Danger: Flood zone with deep or fast
1.25 - 2.5	Significant	Dangerous for most people "Danger: flood zone with deep fast flowing water"
>2.5	Extreme	Dangerous for all "Extreme danger: flood zone with deep and fast flowing water"
Bef: FD2321/TB	1 Table 3.2	

#### Table 3-3 Hazard to People as a Function of Velocity and Depth<sup>22</sup>

#### Hazard Maps - Abingdon Town Centre

The hazard maps identified within the town centre, there is practically no overland flooding predicted from the head of the Stert culvert in the 1 in 20 event. During a 1 in 100 return period event, the flood is predicted to extend down the length of Stert Street and into Bridge Street, see Map 2 appended to this report.

Predicted flood extents during the 1 in 100 plus climate change event continue down Bridge St as far as the Thames, and also along the historic course of the Stert to the east of Stert St, along Broad Street and to the north of Bury Street. However, flood depths in the Stert flood extents are shallow, and therefore it is possible that dry access would be available, see Map 3 appended to this report.

During the 1 in 1000 year return period event, flooding is predicted to reach significant enough depths to flow westwards into Ock Street (not shown on Map 4 - but to the west of Stratton Way). This flooding is largely confined to the roadway of Ock Street but is predicted to be able to flow south into the River Ock, see Map 4 to the rear of this report.

In all modelled events, hazard within the site is predicted to be moderate (hazard to some).

#### Use of the Hazard Maps within the Exception Test

Table 3-4, reproduced from the SFRA, makes suggestions for how the hazard classifications and vulnerability classes should be addressed when giving consideration to locating development within Flood Zone 3.

When considering the proposals for the Charter area it should be remembered that PPS 25 (Para 8) advises that in determining applications LPAs should apply the sequential approach (see paragraphs 14 -17 in PPS 25) at a site level to minimise risk by directing the most vulnerable development to areas of lowest risk, matching vulnerability of land use to flood risk.

So whilst it might be possible to prepare application proposals that satisfied the exception test, the same proposals might not be compliant with the sequential approach within the site. The redevelopment proposals should thus give careful consideration to the location and extent of the existing flood zones and the spatial location of development.

Locating the health centre and day care centre (more vulnerable uses) on the first floor may be suitable, provided safe internal and external escape routes are provided Safe access and egress is a requirement, in accordance with PPS25, for the location of a more vulnerable land use in Flood Zone 3a and can be provided northward towards Stratton Way. If the health centre is to be located on the ground floor then it is recommended that it is situated in the North West corner of the site within Flood Zone 2. The residential development opportunity

<sup>&</sup>lt;sup>22</sup> DEFRA/ Environment Agency (2006), "Flood and Coastal Defence R&D Programme, R&D Outputs: Risks to People, Phase 2, FD 2321/TR2 Guidance Document"

above the new retail unit, (see Figure 2.3) should be kept to the west of the site to ensure dry access and egress can be provided along Bury Street and west towards Bath Street.

It should be noted also that the hazard maps use the current building foot print, may change within the layout, or increase in building footprint may have a negative impact on the flood risk to the site. Therefore, careful planning of the building layout is recommended.

The level of detail in the modelling used for the SFRA is not appropriate for analysis at site scale and thus it is recommended that once the site layout has been finalised, a more detailed analyses should be performed for the Charter area to inform decision making on the spatial location and the impact of flood risk of the proposed development, to ensure that the part (c) of the exception test can be passed.

Hazard	Vulnerability				
Classification	Essential Infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Not classified	Suitable	Suitable	Suitable	Suitable (but see note 1)	Suitable (but see note 1)
To None	Suitable	Suitable	Suitable	Suitable (but see note 1)	Suitable (but see note 1)
To Some	Possibly Suitable	Possibly Suitable	Suitable (but see note 2)	Suitable	Suitable (but see note 1)
To Most	Not suitable	Not suitable	Possibly Suitable (but see note 2)	Suitable	Suitable
To All	Not suitable	Not suitable	Not suitable	Suitable	Suitable

Notes:

1. Consider reserving areas of unclassified and hazard to none for higher vulnerability classes.

2. Safe internal or external escape routes must be provided.

#### **Other Sources of Flooding**

#### Surface Water

Map 5 to the rear of this report shows the predicted depth of flooding in a 1 in 100 year pluvial (surface water) event. This map was taken from SFRA. The area of the proposed development that is effected is the north eastern part of the site. The maximum depth of pluvial flooding at the site is less than 0.5 m.

It should be noted that the surface water map was prepared before detailed LiDAR terrain data became available for Abingdon and the SAR DTM used is considered to be inferior to the LiDAR in this area of the town. The main surface water flow paths modelled are those of the River Stert. Therefore the fluvial flood map should be used as the most accurate source of flood risk in this part of Abingdon.

#### **Ground Water**

The SFRA did not identify historic incidents of groundwater flooding within this area. Approximately 50% of the area is in an area on a minor aquifer with high vulnerability.

#### **Sewer Flooding**

 <sup>&</sup>lt;sup>23</sup> South Oxfordshire District Council & Vale of White Horse District Council Strategic Flood Risk Assessment, Level
 1 & 2 FINAL, JBA Consulting June 2009 pp 76



#### **Recommendation for Reducing Flood Risk**

Prior to finalising the proposed conceptual site layout a more detailed assessment should be performed. This assessment can then be used to consider the application of the sequential approach to the layout of development in the charter area and if necessary evaluate the implications of mitigation measures to locally change the extent and depth of flooding. The flood mitigation proposals will be a critical element of the redevelopment and it is recommended that the feasibility and scope of the measures be understood at an early stage in the decision making process (e.g. master-planning stage), and preferably before submission of individual site proposals. The Environment Agency should be consulted during this process.

A full Flood Risk Assessment (FRA) should be carried out at the time a planning application is submitted for the development to ensure that all flood risk mitigation measures are incorporated into the final layout and design of the Bury Street and Charter Area. The following recommendations should be taken into account when completing the FRA:

- Apply the Sequential Approach at site level and plan the development within the site to ensure that the land uses are located in the least risk flood zones, for example;
  - a. More vulnerable uses, such as the health centre should be located in the North West corner of the site as this is within Flood Zone 2, or on the first floor of the redevelopment with safe access and egress to adjoining areas within Flood Zone 1 or 2,
  - b. Less vulnerable uses such as the retail units can be located within Flood Zone 3.
- An Emergency Evacuation Plan should be carried out for more vulnerable developments, such as the Health Centre, Day Centre and potential residential dwellings/ hotel to ensure that in the event of a flood that safe access and egress is ensured.
- That finished floor levels of are above the 1 in 100 year flood level, and where possible the 1 in 100 year plus climate change flood level.
- Incorporate flood resilience measures into buildings for example, raise electrical sockets above the 1 in 100 year level and damp proof walls and floors.<sup>24</sup>
- The River Stert should be remodelled to represent the revised building footprint, to ensure that flood risk is not increased within the development area or on Stert Street.

consulting

<sup>&</sup>lt;sup>24</sup>Environment Agency (2009) "Prepare your property for flooding - A guide for householders and small businesses" http://publications.environment-agency.gov.uk/pdf/GEHO1009BRDL-e-e.pdf

## 4. Conclusions

The Vale of White Horse District Council proposes to develop the Charter and Bury Street Area of Abingdon Town centre by:

- The refurbishment of the shopping centre (including from Queen Street) and enable the gradual replacement and enlargement of the existing shops.
- The redevelopment of the Cargo and Somerfield stores for more modern shopping units on the ground floor with a new library and health centre above with the option for a hotel, offices and/ or flats.
- Introducing a major new store in the Charter area with car parking above it.

This area lies within the Environment Agency Flood Zones 2 & 3a. A Sequential Test an Exception Test has been applied to the development to be In accordance with Planning and Policy Statement 25: Development and Flood Risk.

#### Sequential Test

The LPA has identified that there are no other suitable alternative sites within the geographic base that fulfil the same function or development criteria as the refurbishment of the Bury Street and Charter Area. Thus there are no reasonably available sites in areas with a lower probability of flooding.

#### **Exception Test**

It has been shown that part (a) and (b) of the Exception Test can be passed for the proposed refurbishment of the Bury Street and Charter Area.

A full Flood Risk Assessment will be required when the design and layout for the proposed refurbishment of the Bury Street and Charter area is finalised, to ensure that part (c) of the exception test can be passed. This will include the remodelling of the River Stert to take into account the new layout of the proposed development. Safe access and egress can be achieved

Table 4.1 summarises the outcome of the application of this test.

#### **Table 4-1 Application of the Exception Test**

Part	Requirement	Comment
а	"It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk informed by a SFRA where one has been prepared. If the DPD has reached the 'submission' stage – see Figure 4 of PPS12: Local Development Frameworks – the benefits of the development should contribute to the Core Strategy's Sustainability Appraisal"	The proposed development meets many of the requirements of the Core Strategy Preferred options and has been scored positively by the Core's Strategy Sustainability Appraisal, see section 3.1.
b	"the development should be on developable, previously-developed land or, if it is not on previously developed land, that there are no reasonable alternative sites on developable previously-developed land."	The Bury Street and Charter Area functions as a retail centre of Abingdon town centre, Other additional facilities are located here, such as Health Centre.
C	"A FRA must demonstrate that the development will be safe, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall." It must also demonstrate that a sequential approach has been adopted to location of development at the site (this exercise should be performed prior to finalising the conceptual layout plan)	Safe access and egress can be attained northwards towards Stratton Way or west towards Bath Street. For this location a more detailed assessment should be performed to confirm that the necessary mitigation is feasible before finalising the outline development details (in advance of a site specific FRA)

## **Appendices**

## A. Environment Agency Sequential Test

PPS25 FREA (inational) version 2.1 Advice issued on 27th January 2018	Environment Agency
orm	
	PPS25 FRSA (national) version 2.1 Advice issued on 27th lanuary 2010

Vie recommend that the approach below is used by local planning authorities to apply the Sequential Test to planning applications located in Flood Zones 2 or 3. The approach provides an open demonstration of the Sequential Test being applied in line with PPS25 and its associated Practice Guide. Close working between local planning authority development control and forward planning departments will be required to implement the Sequential Test effectively.

A pro forma template (Microsoft Word), based on the process below, is available on request from your local Environment Agency Planning Liaison team-call 08708 506 506 for details.

Note: the Sequential Test does not apply to Change of Use applications

#### Stage 1 - strategic application & development vulnerability

The Sequential Test can be considered adequately demonstrated if both of the following criteria are met:

The Sequential Test has already been carried out for the site (for the same development type) at the
strategic level (development plan) in line with paragraphs D5 and D6 of PPS25; and

- The development vulnerability is appropriate to the Flood Zone (see table D1 PPS25).
- 1.1 Has the Sequential Test already been carried out for this development at development plan level? If yes, reference should be provided for the site allocation and Development Plan Document (DPD) in question.
- 1.2 Is the flood risk vulnerability classification of the proposal appropriate to the Flood Zone in which the site is located according to tables D1 and D3 of PPS25? The vulnerability of the development should be clearly stated.

Finish here if the answer is Yes to BOTH questions 1.1 and 1.2

Only complete stages 2 and 3 if the answer to EITHER questions 1.1 or 1.2 is 'No'

FRSA014a

PPS25 FRSA (national) version 2.1 Advice issued on 27th January 2010

#### Stage 2 - defining the evidence base

- 2.1 State the geographical area over which the test is to be applied.
- 2.2 If greater or less than the district boundary justify why the geographical area for applying the test has been chosen.

Identify the geographical area of search over which the test is to be applied - this will usually be over the whole of the Local Planning Authority (LPA) area but may be reduced where justified by the functional requirements of the development (e.g. catchment area for a school or doctors surgery) or relevant objectives in the Regional Spatial Strategy or Local Development Framework (LDF). For example, if a local need such as affordable housing or town centre renewal has been identified as part of the Sustainability Appraisal process for a DPD that has reached 'submission' stage, this might mean that the geographical area of search is restricted to a specific regeneration area. Equally, in some circumstances it may be appropriate to expand the search area beyond the LPA boundary for uses that have a sub-regional, regional or national market. For example, the location of an oil refinery serving the whole country should be determined on a countrywide basis.

#### 2.3 Identify the source of reasonable available sites, either:

- background / evidence base documents (state which), or if not available
- other sites known to the LPA that meet the functional requirements of the application.

Identify the source of 'reasonably available' alternative sites - these sites will usually be drawn from the evidence base / background documents that have been produced to inform the emerging LDF. For example, an important source of information for housing sites will be provided by *Strategic Housing Land Availability Assessments* as required in PPS3.

In the absence of background documents, 'reasonably available' sites would include any sites that are known to the LPA and that meet the functional requirements of the application in question, and where necessary, meet the LDF Policy criterion for windfall development (see box below).

#### Windfall sites

Windfall sites are those which have not been specifically identified as available in the Development Planning process. They comprise previously-developed sites that have unexpectedly become available. Government policy in PPS3 at paragraph 59 advises that LPAs should not normally rely on windfall sites to meet housing needs.

We recommend that the acceptability of windfall applications in flood risk areas should be considered at the strategic level through a policy setting out broad locations and quantities of windfall development that would be acceptable or not in Sequential Test terms. Guidance on determining the housing potential of windfall (where justified) for broad locations can be found in paragraphs 50 -52 of *Strategic Housing Land Availability Assessments*, Practice Guidance to PPS3.

In the absence of a flood risk windfall policy, it may be possible (where the data is sufficiently robust) for the LPA to apply the Sequential Test taking into account historic windfall rates and their distribution across the district relative to Flood Zones. Where historic and future trends evidence indicate that housing need in the district through windfall can be met largely/entirely by development outside high flood risk areas, this may provide grounds for factoring this into the consideration of 'reasonably available' alternative sites at the planning application stage.

FRSA014b

**JBA** consultina

Environment Agency



Environment

Agency

PPS25 FRSA (patienal) version 2.1 Advice (sued on 27th January 2010

#### 2.4 State the method used for comparing flood risk between sites, either:

- Environment Agency Flood Map, or
- · an up to date Strategic Flood Risk Assessment held by the Local Planning Authority, or
- site specific Flood Risk Assessments where they are suitable for this purpose, or
- another map or sources of flooding information not listed (state which).

Identify the means of comparing flood risk between each site - as a starting point this will be the Environment Agency Map showing the Flood Zones. If comparing sites within the same Flood Zone it is necessary to use a Strategic Flood Risk Assessment showing a variation in risk throughout the Flood Zone or site specific Flood Risk Assessments where these are available and suitable for the purpose.

#### Stage 3 - applying the Sequential Test

Compare the reasonably available sites identified under stage 2 with the application site. Sites should be compared in relation to flood risk; development plan status; capacity; and constraints to delivery including availability, policy restrictions, physical problems or limitations, potential impacts of the development, and future environmental conditions that would be experienced by the inhabitants of the development.

- 3.1 State the name and location of the reasonably available site options being compared to the application site.
- 3.2 Indicate whether flood risk on the reasonable available options is higher or lower than the application site. State the Flood Zone or SFRA classification for each site.
- 3.3 State whether the reasonably available options being considered are allocated within the Development Plan. Confirm the status of the Plan.
- 3.4 State the approximate capacity of each reasonably available site being considered. This should be based on:
  - the density policy within a LDD, and
  - past performance in this respect.
- 3.5 Detail any constraints to the delivery of identified reasonably available options; for example, availability within a given a time period or lack of appropriate infrastructure. This part of the test should include recommendations on how these constraints could be overcome and when.

#### Sequential Test conclusion

Are there any reasonably available sites in areas with a lower probability of flooding, that would be appropriate to the type of development or land use proposed?

#### Next steps (see over)

FRSA014c



Environment Agency

PPS25 FRSA (national) version 2.1 Advice Issued on 27th January 2010

Exception Test - Where necessary, the Exception Test should now be applied in the circumstances set out by table D1 and D3 of PPS25.

#### Applying the sequential approach at site level

In addition to the formal Sequential Test, PPS25 sets out the requirement for developers to apply the sequential approach (see para. 14 and D8) to locating development within the site.

As part of their discussions with planning applicants, LPAs should ask the following questions:

- · Can risk be avoided through substituting less vulnerable uses or by amending the site lay-out?
- Has the applicant demonstrated that less vulnerable uses for the site have been considered?
- Can density be varied to reduce the number or vulnerability of units located in higher risk parts of the site?

FRSA014d



# Map 1: Environment Agency Flood Zones





# Map 2 : Hazard Map- 1 in 100 year

