

# Development in Chesterfield, Bolsover and North East Derbyshire

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## 7.1

### Summary of Regional Flood Risk Assessment

The tables below show some figures produced in preparation for the regional flood risk assessment (RFRA) for the East Midlands. This was carried out by Faber Maunsell in July 2006 using proposed housing forecasts according to the Draft Regional Spatial Strategy (RSS). This provides a general assessment of the number of properties at risk and the ranked risk for the LPAs in the East Midlands. The assessment also attempts to assess potential future flood risk from housing provision and development pressure.

The work undertaken that produced these figures will form the basis of the East Midlands Regional Assembly's (EMRA's) RFRA as required by PPS25. In doing this it will assist the Regional Assembly and LPAs in assessing the feasibility and implications for future flood risk of current planned residential development sites in emerging RSS and LDFs.

A two part Flood Risk Profile (FRP) was developed, considering both "inherent" and "actual" flood risk in each LPA area. Part 1 of the Profile identified the percentage of land in Zone 3 and LPAs were placed in one of four Groups (A, B, C or D) according to the percentage of Zone 3 land in their area. The LPA's perception of the significance of flood risk as a factor to be considered in development planning was ranked on a scale from 1 to 10, with 10 being very important. Part 2 of the profile identified the level of "actual" risk in the LPA's area by considering relative levels of flood risk from primary, secondary and residual risk sources. For each of these factors, both probability and consequences of flooding were taken into account. Risk levels were identified as High, Medium or Low.

To supplement the percentage classification, the score allocated by the LPA to indicate their perception of the significance of flood risk in the making of strategic planning decisions, has been added. See Table 13 below for details.

Table 13: Percentage of properties that are in Flood Zone 3

District	% of props in Flood Zone 3	Band	Significance
Chesterfield	less than 10%	A	4 - medium significance
Bolsover	less than 10%	A	2 - low significance
North East Derbyshire	less than 10%	A	5 - medium significance

Two essential elements of flood risk, i.e. probability and consequence, have been considered for the primary source of flooding (i.e. rivers) and within each LPA area the locations and types of flood defences have been identified. Probability has been assessed as being high, medium or low, according to the following criteria:

- High If none (or very few) of the flood defences currently meet the target standards.
- Medium If flood defence standards are variable – a mixture of high and low.
- Low If all (or most) of the flood defences currently meet the target standards.

Consequence has been assessed as being high, medium or low, according to the following criteria:

- High If flooding from Primary Sources would impact on dense urban areas.
- Medium If flooding from Primary Sources would impact on semi-urban, scattered developments.
- Low If flooding from Primary Sources would impact on rural areas (undeveloped land).

Table 14 makes an assessment (based on the RFRA) of whether each LPA area is not protected to the required standard by existing flood defences. Typical target standards of protection for urban developments against flooding from river flooding are 1 in 100 years.

Table 14: LPA areas benefiting from defences

District	Probability	Consequence
Chesterfield	M	M
Bolsover	L	L
North East Derbyshire	L	L

Secondary sources of flooding have also been considered. Similar criteria for probability and consequences were used as for primary sources. Secondary sources of flooding have been taken to be arterial drainage systems operated by IDBs, and surface water sewers maintained by Severn Trent Water.

However, because IDB systems usually have adequate capacity and water companies were (at the time) required to accept surface water flows from development, neither the probability nor the consequences of flooding from secondary sources are likely to be high (relative to those from primary sources). It should be noted that this may change in the future as water companies may no longer be obliged to accept like for like surface water flows.

Taking this into account, only one indicator has been used to illustrate flood risk from secondary sources:-

M – where probability or consequences is medium

L – where both probability and consequences are low

Table 15: LPA areas at risk from secondary sources of flooding

District	Probability
Chesterfield	L
Bolsover	L
North East Derbyshire	L

Residual risk for each LPA area has been assessed (see Table 16). Residual risk of flooding is the risk which remains after flood defences have been provided. By their very nature, residual risks generally have a low probability of occurrence. However, consequences can vary from low (e.g. marginal overtopping of a flood defence wall), to high (e.g. sudden collapse of a high flood defence bank – where property is located close by).

One indicator has been used to illustrate the possible consequences of residual risk, i.e. either H, M or L, depending on the extent and height of flood defences in the locality and the density and proximity of development relative to the defences.

Table 16: LPA Areas Residual Risk

District	Probability
Chesterfield	M
Bolsover	L
North East Derbyshire	L

Table 17 combines Tables 13, 14, 15 and 16 in an effort to show the full Flood Risk Profile, for each LPA area.

Table 17: Flood Risk Profile

District	Inherent Risk	Significance	Actual Risk			
			Primary		Secondary	Residual
			Probability	Consequence		
CBC	A	4	M	M	L	M
BDC	A	2	L	L	L	L
North East Derbyshire	A	5	L	L	L	L

## 7.2

### Chesterfield, Bolsover and NE Derbyshire Area

#### 7.2.1

##### *Chesterfield*

From the RFRA figures it could be concluded that Chesterfield has an average to low level of flood risk. Table 17 shows that less than 10% of Chesterfield falls within Flood Zone 3, while the significance of the flood risk is medium. Chesterfield need to be able to identify appropriate mitigation measures for future developments as medium to high level risks exist from primary sources of flooding. Residual risks in some areas are medium as main rivers pass through semi-urban areas.

**The overall flood risk to Chesterfield is classed as medium.**

These figures are not a good predictor of the future and should be treated with caution. Chesterfield has a large green belt area which constrains where new development can currently take place. There is therefore much more development pressure in Chesterfield than is perceived by these figures. Chesterfield has a potentially significant source of flood risk in the River Rother.

#### 7.2.2

##### *Bolsover*

Bolsover has a low level of flood risk. Less than 10% of Bolsover falls within Flood Zone 3, and residual risks are relatively low.

**The overall flood risk to Bolsover is classed as low.**

#### 7.2.3

##### *North East Derbyshire*

NE Derbyshire appears to have a more than 10% of land in Zone 3 (21% - 50%), and the significance of flood risk as rated by the LPAs is medium.

**The residual flood risk and the risk from secondary sources of flooding are low.**

These figures do not take into account flood risk from other sources, just the Flood Zone maps, land drainage and flooding from surface water sewers. Flood risk in Chesterfield, Bolsover, and NE Derbyshire comes from a number of sources including groundwater flooding, artificial sources, and failure of assets. These tend to be sporadic in nature and can occur at a higher return period than river flooding.

#### 7.2.4

##### *Current Major Development Projects*

##### 7.2.4.1

##### *Chesterfield*

Major employment opportunities have been identified in south east of Staveley at Markham Vale (EMP1). Outline planning permission was issued in April 2005, and it is anticipated that the project will be completed over a period of 10 years (from when permission was granted). The total employment land at Markham Vale is 64.6 ha. Structural plan provision for employment land is concentrated on class B uses, comprising office, business and light industry (B1), general industry (B2) and distribution (B8). The majority of this area is located in Flood Zone 1 and should be suitable for all types of development.

Further employment land has been allocated in the 2006 Replacement Chesterfield Borough Local Plan (EMP7) in the business districts of Staveley and along the A61 corridor (GEN11). Sites for employment development in the long term have also been identified as Troughbrook works and North Brimington (EMP6). Significant parts of these development sites are located in Flood Zones 2 and 3 and would require detailed flood risk assessments to be carried out.

Planning permission has recently been granted for a large tourism development near Unstone Green area (EMP11) (development in Chesterfield Borough Council, nearby village in North East Derbyshire District Council). This site is located in Flood Zone 1 and should be suitable for the proposed development.

Chesterfield Borough Council is currently leading a redevelopment scheme within the Town Centre Northern Gateway and to the south of Chatsworth Road in the A619 corridor (GEN13). The majority of the site is located in Flood Zone 1 but some areas fall within Flood Zone 2. The development site should be made sequentially appropriate by placing lower vulnerability uses (such as public open space) in the high risk Flood Zones (see section 8.3 for more information). At this location there are two major proposed residential developments (HSN1/H38a & HSN1/H38b) located predominantly in Flood Zone 3. It is essential that the sequential approach is considered during the design to direct development away from low-lying areas if possible.

Planning permission has been granted for the development of a 9,755 sq.m DIY retail store on land at Derby Road, together with 2,325 sq.m of builders centre and 1,860 sq.m of garden centre (SHC5). Part of the development is within Flood Zone 3a and 3b.

There appear to be numerous sites for both housing and employment located in Flood Zone 1 and these should be brought forward prior to sites at a higher risk of fluvial flooding.

#### 7.2.4.2

##### Bolsover

There are numerous sites that have been identified as having potential for either residential or employment or a mixture of both. The majority of these sites are located in Flood Zone 1 and should be suitable for development. Some however fall in Flood Zone 2 or 3, for example:

One site of potential concern is located adjacent to Station Road, Clowne (172) which falls partially in Flood Zone 3a. Also of concern is the Oxcroft Coal Disposal Point Site (226). Parts of this site are located in Flood Zone 3 and any development should be sequentially appropriate.

The Coalite Site (218 and 219) within Bolsover is considered to be suitable for employment development and part of it falls Flood Zone 3a adjacent to the Doe Lea. Sequential approach should be applied by placing lower vulnerability uses in the high risk Flood Zones (see section 8.3 for more information).

Employment site 207 is located partially in Flood Zone 3a. A detailed flood risk assessment should accompany the development within Flood Zone 3, which should consider the sequential approach (see section 8.3 for more information).

#### 7.2.4.3

##### North East Derbyshire

There are sites within the district which are already in employment use. For these sites according to the policy E6 either new employment development or extensions to existing premises will be permitted in cases where they would not lead to unacceptable environmental problems. Sites E6 a), c), d), e), f) and k) are shown to be located within the indicative 1 in 100 year flood plain.

There are small residential sites which already have planning permission and are shown to lie within the 1 in 100 year floodplain.

It is proposed to replace a school at Unstone. Part of this site is located in Flood Zone 3 and, as such, any redevelopment should be sequentially appropriate.

#### 7.2.5

##### *Potential Future Development Sites*

Potential future development sites have been suggested by the LPAs. These sites have come from a number of sources including the local development plans. Each site has a reference number indicating the potential future development sites in Appendix B and the development site drawings in Appendix D.

The Adopted East Midlands Regional Spatial Strategy (RSS8) states that the Local Authorities should employ policies and select sites in order to achieve a target of 60% of additional dwellings on previously developed land at the Regional level by 2021.

- 7.2.5.1 **Chesterfield**  
Major employment opportunities have been identified within the Town Centre Northern Gateway and to the south of Chatsworth Road in the A619 corridor.
- Within Chesterfield, potential future development sites are fairly concentrated. According to the local plan, Chesterfield should provide 214 dwellings each year between 2011 and 2026. A sufficient supply of housing sites must be identified to meet a regional housing allocation for the district of 9,000 dwellings from 2006 to 2026. The national target of 60% housing completions on previously-developed land has already been exceeded in the borough and is approaching 100%.
- 7.2.5.2 **Bolsover**  
The Preferred Options stage of the Site Specific and Area Based allocation development Plan Document was prepared by Bolsover District Council in 2006, which includes site specific proposals to deliver the policy framework set out in the Core Strategy Preferred Options.. According to the Site Allocations document a sufficient supply of housing sites must be identified to meet a regional housing allocation for the district of 7,449 dwellings from 2006 to 2026.
- The Bolsover Employment Land Study (2006) identifies 481 ha of existing employment land in the district; however not all of this land meets the needs of the district either because it is poor quality or is not economically attractive. Analysis of the sites has identified 20.9 ha of existing land or land currently allocated in the Adopted Local Plan that could be reused for other uses.
- 7.2.5.3 **North East Derbyshire**  
The Derby and Derbyshire Joint Structure Plan sets out a requirement for 4300 dwellings to be provided within North East Derbyshire between 1991 and 2011. At 31 March 2005, 3262 dwellings had been completed in the District since 1991. The Urban Capacity Study identifies potential development sites to accommodate approximately 353 dwellings in the Chesterfield area (sub-area within NEDDC. In terms of housing requirements the house divided into three Structure Plan Sub Areas.) Those brownfield sites with a capacity for 10 or more dwellings form allocations, accommodating a total of approximately 209 dwellings.
- Within NE Derbyshire, provision should be made for 125 ha of land for general industrial, business use and distribution development in the 1991-2011 period. This represents an annual completion of 6.25 ha for the district.
- 7.2.6 *Use of the SFRA for LDF potential development sites*  
*Planning Policy Statement 3: Housing* requires that the LPA undertake a Strategic Housing Land Availability Assessment (SHLAA) to support the delivery of sufficient land to meet the community's need for more homes. The purpose of the assessment is to evaluate the existing supply of housing, identify sites with potential for housing, assess their housing potential and assess the likelihood of those sites coming forward for development. It is a key part of the evidence base for the LPA's LDF.
- There are a number of small and large developments within the three Districts, some of which are located on greenfield land and some cover major industrial units.
- The SFRA should be used to sequentially assess sites in the CBC's, BDC's and NEDDC's Draft SHLAA, following a similar format to the sites already assessed in Appendix C. The SFRA provides a consistent methodology for assessing any new potential development sites submitted to the LPA. The assessment of these sites will also follow the guidance in the SFRA and the format of Appendix B.
- For both the SHLAA and potential development sites, flood risk is an important consideration in determining the allocation of sites for new development. However, the LPA will be required to balance this against other environmental, social and economic factors and planning constraints. For any sites that are considered for allocation contrary to the SFRA, appropriate mitigation measures should be provided.