

LAND SOUTH OF NEWARK

FLOOD RISK, WATER SUPPLY & WASTEWATER DISPOSAL

1.1 BACKGROUND

1.1.1 WSP Development and Transportation (WSP) are acting on behalf of Newark and Sherwood District Council in partnership with The Catesby Property Group in respect of the District Council's New Growth Point bid to the Department for Communities and Local Government (DCLG).

1.2 FLOOD RISK AND MITIGATION STRATEGY

1.2.1 Flooding is an issue within the District and much of the land around Newark lies within the natural floodplain. Land to the south of Newark is relatively unconstrained by the washlands of the River Trent, which are evident to the west and north of the town, but the River Devon and Middle Beck to the south have implications for future development proposals.

1.2.2 Meetings have been held between WSP, the EA, and Newark and Sherwood District Council which have confirmed that all parties are comfortable with flood risk issues at this location, and are in general agreement regarding areas requiring further investigation, future work requirements, and timescales for implementation, namely:

- Initial confirmation that adequate land is available, within land under The Catesby Property Group's control, for the provision of compensatory flood storage;
- Preparation of a Flood Risk Statement to accompany the New Growth Point bid;
- Preparation of a district wide Strategic Flood Risk Assessment (SFRA) by Newark and Sherwood District Council and the EA (by February 2007);
- Confirmation of floodplain extents based upon latest (2006) flood modelling of the local watercourse networks associated with the design of the A46 Newark to Widmerpool Improvements (yet to be released by Highways Agency);
- Preparation of a site specific Flood Risk Assessment, and detailed flood mitigation strategy, to complement and feed into the district wide SFRA (by December 2006).

1.2.3 The Environment Agency (EA) have previously advised the DCLG that, although this site is not without a degree of flood risk, it is considered to be manageable. From an initial appraisal of flood risk issues at this location, flood risk specialists at WSP have indicated that there are no significant flood risk constraints that cannot be adequately mitigated as part of the development proposals within land under The Catesby Property Group's control.

1.2.4 As part of the development proposals to the south of the town, flood mitigation measures are proposed in order to compensate for the loss of flood storage volumes resulting from routing the raised embankment of the proposed Southern Relief Road through areas deemed to be at risk of fluvial flooding. Flood mitigation measures include the reprofiling of areas of land within the proposed Country Park currently situated outside of the 1 in 100 year floodplain.

1.2.5 As demonstrated on WSP Drawing No. 11500703 / 01, adequate areas of land situated outside of the 1 in 100 year floodplain are available, within land under The Catesby Property Group's control, to provide the required quantum of compensatory flood storage.

1.2.6 All built development will be situated within the EA's 'little or no flood risk' Flood Zone 1 and will be situated outside of the 1 in 1000 year fluvial floodplain for the lifetime of the development. As set out within Planning Policy Guidance Note 25 : Development and Flood Risk (PPG25), sites in Flood Zone 1 have no constraints due to river, tidal or coastal flooding and are suitable for residential, commercial and industrial uses and other forms of development.

1.2.7 Surface water runoff from the proposed development site is proposed to be controlled at source through a sustainable approach to surface water management (SUDS) so as not to exacerbate any existing flood risk associated with upstream or downstream areas.

1.2.8 This SUDS approach will mimic the existing natural drainage regime, whereby surface water run-off predominantly drains to the Middle Beck at rates from the existing 'greenfield' site, or less, for up to and including the critical 1 in 100 year event (incorporating an allowance for climate change) in line with EA criterion.

1.2.9 A full SUDS 'management train' approach is proposed to be adopted as part of the development scheme and will consider water quantity, water quality, amenity and biodiversity. A range of techniques are available to reduce flood risk by attenuating the rate and quantity of surface water runoff from the site, subject to underlying subsoil and groundwater conditions. This approach can offer other benefits in terms of promoting groundwater recharge, water quality improvement, and amenity enhancements.

1.3 POTENTIAL OPPORTUNITIES AND BENEFITS

1.3.1 Within the significant areas of proposed Country Park, this location for growth also offers an opportunity to provide strategic flood alleviation to benefit the wider community, in particular, Hawton village and areas further downstream along the River Devon and River Trent.

1.3.2 The proposed development site, which incorporates extensive existing riverine corridors along the Middle Beck and the River Devon, offers an opportunity to enhance ecological habitat, encourage biodiversity, and provide potential benefit to flora and wildlife species of conservation concern as set out within the within the Nottinghamshire Local Biodiversity Action : Habitat Action Plan for Euthrophic and Mesotrophic Standing Waters.

1.3.3 The development proposals, which comprise extensive areas of Country Park and public open space, offer an opportunity to enhance habitat and encourage biodiversity. Of particular interest to the EA in this location would be the provision of wet grassland areas and the potential benefit to flora and wildlife species of conservation concern as set out within the Nottinghamshire Local Biodiversity Action Plan. This location for growth offers the potential to utilise proposed flood compensation areas for such a purpose.

1.3.4 The EA have also indicated that the current ecological value of the Middle Beck is relatively low and realignment of the Middle Beck as part of the proposed Southern Relief Road potentially offers an opportunity to enhance ecological habitat and encourage biodiversity along the riverine corridor.

1.3.5 This location for growth potentially offers an opportunity to alleviate an existing off-site flooding problem associated with the Lowfields Drain which affected several properties at Jericho Road in August 2004.

1.4 APPROPRIATENESS OF DEVELOPMENT IN FLOOD RISK PLANNING TERMS

Sequential Test

1.4.1 PPG25 introduced a sequential test for comparing development sites on the basis of flood risk. The site will be favourably ranked by the EA and Local Planning Authority provided that:

- the built development is situated within 'little or no risk' Flood Zone 1 or 'low to medium risk' Flood Zone 2 (following the implementation of mitigation measures, if appropriate);
- the population living in flood risk areas is not increased;
- the development proposals have no detrimental impact upon upstream or downstream flood risk areas;
- sustainable drainage techniques (SUDS) are implemented;
- habitat and ecology remain unaffected, or are created as part of the development proposals.

1.4.2 The proposed development on land South of Newark can meet the requirements of the Sequential Test.

Exception Test

1.4.3 The draft version of Planning Policy Statement 25 'Development and Flood Risk' (PPS25) was published for consultation in December 2005, with publication of the final document expected in late autumn 2006. PPS25 looks to expand upon the sequential test by introducing an 'Exception Test' in which a risk based approach is used to evaluate appropriateness of potential development sites.

1.4.4 The Exception Test is that:

- the development makes a positive contribution to sustainable communities;
- the development is on developable brownfield land or, where there are no reasonable alternative options, on developable greenfield land;
- a FRA demonstrates that the residual risks of flooding to people and property (including the effects of climate change) are acceptable and can be satisfactorily managed; and
- the development makes a positive contribution to reducing or managing flood risk.

1.4.5 The proposed development on land South of Newark can meet the requirements of the Exception Test.

1.5 STRATEGIC FLOOD RISK ASSESSMENT (SFRA) AND SITE SPECIFIC FRA

1.5.1 Newark and Sherwood District Council are committed to preparing a Strategic Flood Risk Assessment (SFRA) as part of the Local Development Framework process to fully address the issue of flood risk in the allocation of land for future development around Newark.

1.5.2 Newark and Sherwood District Council and the EA, working in partnership, are in the process of preparing a district wide SFRA which will encompass the proposed Newark South site. The SFRA is scheduled to be completed by February 2007.

1.5.3 Work undertaken on behalf of The Catesby Property Group as part of the Land South of Newark site will complement and feed into the district wide SFRA.

1.5.4 WSP have prepared a Flood Risk Statement to accompany the New Growth Point Bid (September 2006), which can be readily extended and enhanced to form a site specific Flood Risk Assessment in line with the requirements of PPG25 Appendix F. The site specific FRA is scheduled to be completed by December 2006.

1.6 WATER SUPPLY AND WASTEWATER DISPOSAL

1.6.1 Severn Trent Water has not highlighted any significant obstacles or constraints that cannot be overcome with regard to water supply or wastewater disposal.

1.6.2 The EA have advised that there is likely to be a need for a Water Cycle Study to inform whether additional potable water demand and sewerage discharges can be managed sustainably. Although driven by the EA, the Water Cycle Study would be heavily dependant upon the cooperation of Severn Trent Water as they have the statutory responsibility for ensuring water supply, providing urban drainage and wastewater treatment, and the responsibility for securing the funding to do so.

1.6.3 From initial liaison with both parties, the scope of the Water Cycle Study will include:

- Identification of key development areas and baseline growth predictions;
- Collation of detailed network models of foul sewerage network and wastewater treatment works, numerical models of water supply network, and river models;
- Baseline modelling to determine current deficiencies in the water cycle (foul flooding, river flooding, continuous treated foul discharges, water quality impacts, water supply demand);
- Growth modelling to determine future deficiencies in the water cycle (foul flooding, river flooding, continuous treated foul discharges, water quality impacts, water supply requirements);
- Identification of strategic infrastructure solutions in conjunction with the key stakeholders;
- Preparation of a timeline for strategic infrastructure provision; and
- Presentation of findings.

1.6.4 The Water Cycle Study will be completed within 6 months. Some overlap between the Water Cycle Study and the SFRA has also been identified, which will require dialogue between stakeholders to ensure a robust and co-ordinated approach is taken.

Water Supply

1.6.5 The potable water supply company responsible for the Newark-on-Trent area is Severn Trent Water. The company has a complex clean water supply system based upon reservoirs, direct river abstraction and ground water sources. Most of the major surface water sources are linked to the strategic treated water grid that runs from the Upper Derwent Valley in Derbyshire to Cheltenham in Gloucestershire, with spurs off across Leicestershire into Rugby in East Warwickshire and into the City of Worcester.

1.6.6 Severn Trent Water has indicated that the entire proposed development on Land to the South of Newark will not be able to be supplied by the existing network without some programmed improvements. The extent of these improvements will be determined by feasibility work to be carried out by Severn Trent Water.

1.6.7 Severn Trent Water has indicated, however, that a potable water supply can be provided to serve the Land South of Newark site provided that adequate improvements or reinforcements of the existing network are determined and programmed appropriately.

1.6.8 The EA's 'Spatial Review of Water Supply and Quality in the East Midlands Final Study Report' produced by Arup in August 2006 summarises that water resources in the East Midlands area will be in deficit without planned supply and demand measures. Transferring water from water resource zones in surplus to those under pressure is one strategic solution highlighted to address any deficits.

1.6.9 The study has also indicated the need for a high level of water efficiency in new homes as an essential contribution to ensuring the region is in surplus over the water planning period (up to 2030). Severn Trent Water will meter new properties as another measure to mitigate against future drought and climate change.

Wastewater Disposal

1.6.10 Severn Trent Water is also responsible for wastewater disposal within the Newark-on-Trent area.

1.6.11 Severn Trent Water has indicated that sewage treatment capacity can be provided to serve the Land South of Newark site providing adequate improvements or reinforcements to the existing infrastructure are programmed and implemented in a timely manner.

1.6.12 The EA's 'Spatial Review of Water Supply and Quality in the East Midlands Final Study Report' produced by Arup in August 2006 summarises that at present if no new work is undertaken to increase sewage treatment works capacity at a number of Severn Trent Water's areas including Newark, there is a risk of not having sufficient treatment capacity to cater for new housing development.

1.6.13 Pumping sewage to an alternative sewage treatment works with additional capacity is one strategic solution highlighted to address local capacity issues. The capacity of smaller works may be expanded or fully utilised and these need to be considered at a local level.

1.6.14 A large sewage treatment works is located at Balderton to the north east of the proposed development area, and a further small sewage treatment works is located to the west of the site at Farndon. A feasibility study by Severn Trent Water is required to assess the existing infrastructure to accommodate the proposed development and recommend any required improvements.