www.erewash.gov.uk EREWASH BOROUGH COUNCIL

Core Strategy Review Representation

The consultation runs between Monday 14 March and May 9 2022.

For representations to be valid, a full name and address must be provided.

If you need to continue with more space for any of your answers, please attach further pages to this form.

All fields marked with an Asterix (*) must be completed.

Title(*)	Mr
First Name(*)	James
Surname(*)	Smith
Job Title (where relevant)	Managing Director
Organisation (where relevant)	Peveril Homes Limited
Address(*)	c/o Agent
Postcode(*)	c/o Agent
Telephone number(*)	c/o Agent
Email Address(*)	c/o Agent

Agent's details (if applicable) Include name, address, contact number and email

Mrs Kamaldeep Saini,

CarneySweeney, 156 Great Charles Street Queensway, Birmingham, B3 3HN

[redacted]

To which part of the Core Strategy Review does this representation relate? (one or more must be ticked)**(*)**

Policies [X] Policies Map [ ] Other text [x]

Please use the box below to tell us specifically where the representation relates to (a policy, the policies map or other text). Do not use the box to make your comments as this is required further down the form.**(*)**

Sustainability Appraisal; Draft Policies and Spatial Structure

Do you consider the Core Strategy Review is Legally Compliant? **(*)**

Yes [ ] No [x]

Do you consider the Core Strategy Review is sound?**(*)**

Yes [ ] No [x]

Do you consider the Core Strategy Review Representation complies with the duty to operate?**(*)**

Yes [ ] No [x]

Please give details of why you consider the Erewash Core Strategy Review is not legally compliant or is unsound or fails to comply with the duty to co-operate. Please be as precise as possible.
If you wish to support the legal compliance or soundness of the Core Strategy Review or its compliance with the duty to co-operate, please also use this box to set out your comments.

Please see response in our representations accompanying this form.

Please set out the modification(s) you consider necessary to make the Core Strategy Review legally compliant and sound, in respect of any legal compliance or soundness matters you have identified above. (Please note that non-compliance with the duty to co-operate is incapable of modification at examination). You will need to say why each modification will make the Core Strategy Review legally compliant or sound. It will be helpful if you are able to put forward your suggested revised wording of any policy or text. Please be as precise as possible.

Please see response in our representations accompanying this form.

Please note in your representation you should provide succinctly all the evidence and supporting information necessary to support your representation and your suggested modification(s). You should not assume that you will have a further opportunity to make submissions.
After this stage, further submissions may only be made if invited by the Inspector, based on the matters and issues he or she identifies for examination.

If your representation is seeking a modification to the plan, do you consider it necessary to participate in examination hearing session(s)?**(*)**

☐ No, I do not wish to participate in hearing session(s)

☒ Yes, I wish to participate in hearing session(s)

Please note that while this will provide an initial indication of your wish to participate in hearing session(s), you may be asked at a later point to confirm your request to participate. If you wish to participate in the hearing session(s), please outline why you consider this to be necessary:

We would welcome an opportunity to address an Inspector during any hearing sessions for the Core Strategy Review to discuss the matters raised in our representations submitted during the various stages of consultation.

Please note the Inspector will determine the most appropriate procedure to adopt to hear those who have indicated that they wish to participate in
hearing session(s). You may be asked to confirm your wish to participate when the Inspector has identified the matters and issues for examination

Please use this space to continue any of your answers.

Please see our full representations accompanying this form, which includes the promotion of our client's site – Land off Draycott Road, Breaston.

CARNEYSWEENEY

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6th May 2022

Planning Policy Team
Erewash Borough Council
Town Hall,
Wharncliffe Road,
Ilkeston, Derbyshire,
DE7 5RP

Sent via email only: planningpolicy@erewash.gov.uk

Dear Sir/Madam,

REPRESENTATIONS TO THE DRAFT EREWASH CORE STRATEGY REVIEW (PUBLICATION VERSION) REGULATION 19 CONSULTATION ON BEHALF OF PEVERIL HOMES LIMITED AND SITE PROMOTION

Introduction

CarneySweeney are instructed by Peveril Homes Limited (referred to as 'our client' hereafter) to submit representations to the current Regulation 19 Consultation on the draft Erewash Core Strategy Review (Publication Version). Our client is also the owner of land shown edged in red on the enclosed Site Location Plan (Appendix 1), referred to as 'Land off Draycott Road, Breaston', which in the context of these representations is being promoted for development.

Whilst our client supports the Authority's approach to release land from the Green Belt to deliver new development, we have significant concerns with the Regulation 19 Consultation as it is supported by very limited evidence base as per the documents available on the Council's website (see Appendix 2 for a copy of the consultation page). The absence of a robust evidence base brings into question the soundness of the plan-making process as there is no clear justification for the proposed approach, which again raises the significant concern that the Authority has not fully assessed all reasonable opportunities for growth in the Borough.

These representations are therefore submitted in response to the consultation questions forming part of this Regulation 19 Consultation, in the context of the matters set out above with regards to the Sustainability Appraisal and Draft Strategic Policy 1 – Housing; with the promotion of our client's site.

Do you consider the Core Strategy Review is Legally Compliant?
No. The Core Strategy Review fails to be supported by appropriate evidence base documents to justify the proposed approach for the distribution of housing growth in the Borough ((see Appendix 2 for a copy of the consultation page). Furthermore, the Sustainability Appraisal for this Regulation 19 consultation has failed to demonstrate that the authority has considered reasonable alternatives to accommodate growth.

Guidance on the preparation of a Sustainability Appraisal (SA) during the plan-making process is set out in the Planning Practice Guidance (PPG) dated March 2014 (as amended), where Paragraph 001 Reference ID: 11-001-20190722 states as follows:

> *"A sustainability appraisal is a systematic process that must be carried out during the preparation of local plans and spatial development strategies. Its role is to promote sustainable*

development by assessing the extent to which the emerging plan, when judged against reasonable alternatives, will help to achieve relevant environmental, economic and social objectives..." (Underlining is our emphasis).

As such, to assess the extent to which an emerging plan will help achieve relevant environment, economic and social objectives, there is an obligation on the authority that such an assessment is judged against reasonable alternatives.

Whilst the Sustainability Appraisal summarises the various 'housing growth' options, it fails to set out firstly, the options for calculating the Objectively Assessed Housing Need (OAHN), and secondly, how the various housing growth 'options' have been assessed against the delivery of the preferred OAHN figure against environmental, economic and social objectives.

We would expect the Sustainability Appraisal to assess reasonable alternatives in identifying the Borough's OAHN. For example, through applying the Standard Methodology as required by Paragraph 61 of the National Planning Policy Framework (published July 2021) but also applying a 'buffer', which would be a reasonable alternative in light of the authority having under delivered against their housing requirement in previous years. This continues to be reflected in the recent Housing Delivery Test 2021, which shows Erewash Borough Council as a 'buffer' authority due to a lack of housing delivery between the period of 2018-2021, with 782 dwellings being delivered in this period against a housing requirement of 990 dwellings i.e. 79% delivery rate. The lack of housing delivery should therefore be taken into account as part of any housing need for the emerging plan period.

In our view, the SA does not currently provide a sound appraisal that supports the proposed strategy for the Core Strategy Review as it has not had regard to all reasonable alternatives.

Do you consider the Core Strategy Review is sound?
No. The Regulation 19 consultation fails to meet the tests of soundness as required under Paragraph 35 of the National Planning Policy Framework (NPPF) as it has not been positively prepared or justified in the absence of appropriate evidence base documents.

Part 1 of Draft Strategic Policy 1 Housing - refers to an Objectively Assessed Housing Need (OAHN) of 5,800 net new homes. There is no evidence accompanying this Regulation 19 Consultation which demonstrates how the authority have calculated the OAHN and so cannot be viewed as being positively prepared or justified. The authority has not included a Housing Land Supply Statement in support of this Regulation 19 Consultation. In the absence of this, through our separate research, we have found that within the authority's 5 year land supply statement – dated December 2019, the authority is found to have a 3.43 years supply. But, this document and neither any updated version forms part of documents supporting this Regulation 19 Consultation.

The authority has been under delivering against its housing need, which is reflected in the Housing Delivery Test 2021, but also previous Housing Delivery Test results, and so it is unclear if the proposed OAHN takes account of this.

The Settlement Hierarchy at Part 2 of Draft Strategic Policy 1 Housing also proposes the allocation of land into the Green Belt. Paragraph 140 of the NPPF outlines that *"once established, Green Belt boundaries should only be altered where exceptional circumstances are fully evidenced and justified, through the preparation or updating of plans..." (Underlining is our emphasis).*

Our client does not necessarily disagree that the authority would need to look at land within the Green Belt, but there is no evidence of the authority undertaking a Green Belt Review Assessment. It is noted that the Strategic Growth Assessment (dated March 2021) supporting this Regulation 19 consultation includes an assessment of proposed allocations against the five purposes for including land within the Green Belt, which are set out at Paragraph 138 of the NPPF. However, this does not represent a Green Belt Review Assessment in the context of justifying the exceptional circumstances to remove land from the Green Belt and demonstrating that the most suitable sites have been identified to accommodate growth. The absence of a Green Belt Review Assessment means that it is difficult to quantify that the

authority has not overlooked other sites, which may also be suitable for removal from the Green Belt to accommodate growth.

Do you consider the Core Strategy Review Representation complies with the duty to cooperate?
No. Paragraph 24 of the National Planning Policy Framework (NPPF) states that *"local planning authorities and county councils (in two-tier areas) are under a duty to cooperate with each other, and with other prescribed bodies, on strategic matters that cross administrative boundaries."* There is no evidence within the consultation documents of Erewash Borough Council having undertaken their duty to cooperate with the adjoining authorities or prescribed bodies etc. as required under Paragraph 24 of the NPPF. This means that it is unknown if the Objectively Assessed Housing Need (OAHN) within Draft Strategy Policy 1 – Housing, has taken account of any unmet need outside the authority's administration area, and therefore, is unlikely to have been prepared effectively as required under the tests of soundness at Paragraph 35 of the NPPF.

Site Promotion – Land off Draycott Road, Breaston

The authority will be aware that our client's site, identified by the red line boundary on the Location Plan at Appendix 1, has been promoted as part of the previous consultation stages for this Core Strategy Review. For completeness, we have enclosed a copy of the previous representations submitted for this site at Appendix 3. Our client's site is located in the Green Belt and comprises circa 37 hectares (ha) of land off Draycott Road (A6005), which abuts Breaston village to the south and is bordered by the line of the old Derby Canal to the north, which now comprises a footpath route. It is noted that the site is shown to be at risk of flooding on the gov.uk website, which has been investigated by our client and a copy of the Hydraulic Modelling Study which supported the previous representations is again enclosed for completeness at Appendix 4.

Within the previous stages of consultation, our client's site was assessed as part of a wider area of circa 87 ha, SGA20 – Land north of Breaston & Draycott within the Strategic Growth Assessment (dated March 2021). It is noted that the 'Statement of Consultation for the Growth Options Consultation Regulation 18 Part 2' document, published as a background document for this Regulation 19 Consultation, concludes that our client's site of circa 37ha has been rejected for the following reason:

> *"The assessment of SGA20 through the Publication version Local Plan's Sustainability Appraisal performed moderately well as a consequence of the site's vast size and scale of housing – something which would necessitate the requirement of substantial and complex infrastructure. Any subsequent reduction in SGA20's size and dwelling capacity would weaken those positives from the original assessment as the reduction in necessary infrastructure reduces the overall sustainability of development."*

We do not agree with the Council's conclusion of our client's site as it has not been justified. This Regulation 19 Consultation is accompanied by the March 2021 Strategic Growth Assessment which maintains the assessment for the wider area of circa 87ha – there does not appear to be an update to this document. The absence of any up to date evidence to demonstrate that our client's site has been fully assessed, raises significant concerns that the authority has failed to consider all reasonable options to accommodate growth and therefore, brings the soundness of the plan into question.

The site is in a sustainable location in close proximity to both existing services and transport linkages offering connectivity as it abuts Breaston Village. Breaston also offers a wide range of everyday facilities and is identified as a "larger settlement" in the currently adopted Core Strategy along with Draycott, West Hallam and Borrowash. We do not agree with the authority reclassifying Breaston as a 'village and hamlet' within the proposed Spatial Structure in the Core Strategy Review. Breaston is a sustainable settlement within the Borough and sits in good proximity to both Nottingham to the east and Derby to the west and so is capable of accommodating a proportionate level of development, which our client's site offers.

Our client has considered the capacity of the site taking account of the need to provide an appropriate and defensible Green Belt boundary and technical matters such as flood risk as noted above. It has been concluded that the likely overall housing yield on the site will be circa 300 dwellings with a developable area of circa 14ha. An illustrative masterplan demonstrating this scale of development is enclosed at Appendix 5.

With this parcel of land falling in the Green Belt, its proposed removal has been assessed against the provisions of Paragraph 138 of the NPPF, which identifies the five purposes for including land in the Green Belt as follows:

a) to check the unrestricted sprawl of large built-up areas;
b) to prevent neighbouring towns merging into one another;
c) to assist in safeguarding the countryside from encroachment;
d) to preserve the setting and special character of historic towns; and
e) to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.

In assessing our client's site of circa 37ha against the five purposes of including land within the Green Belt, we comment as follows:

- **Green Belt Purpose a): Checking the Unrestricted Sprawl of Large Built-Up Areas** - The site is not isolated from Breaston comprising a gap along the frontage of Draycott Road, with existing built form located either side of the site. As such, its release would not result in unrestricted sprawl of large built up areas and would not therefore conflict with Purpose a).

- **Green Belt Purpose b): Preventing the Merging of Neighbouring Towns** – Our client's site would not result in the merging of Breaston and Draycott as it does not extend towards Draycott in the west, and so its release from the Green Belt would not conflict with Purpose b).

- **Green Belt Purpose c): Safeguarding the Countryside from Encroachment** – The site is not isolated or disconnected from Breaston. Whilst our client's site is circa 37ha in size, the amount of developable land available would be circa 14ha. When viewed in the context of Breaston Village as a whole, which is identified as a larger settlement within the adopted Core Strategy, we do not believe that this scale of developable land would lead to an unacceptable level of development in the context of Purpose c).

- **Green Belt Purpose d): Preserve the Setting and Special Character of Historic Towns** – Our client's site is not located within a Conservation Area and neither does it contain other heritage designations. Whilst Breaston Conservation Area lies to the east and Draycott Conservation Area lies to the south west, these conservation area boundaries are not within the immediate vicinity of the site. Therefore, we do not believe that the development of this site would result in unacceptable heritage harm in the context of Purpose d).

- **Green Belt Purpose e): To assist in urban regeneration, by encouraging the recycling of derelict and other urban land** – Due to the site being greenfield, it would not assist in the regeneration of derelict or other urban land. However, as discussed above, the level of developable land would be circa 14ha of a site of circa 37ha and would provide opportunities to incorporate area of green infrastructure.

Overall, the release of this site from the Green Belt for development would not result in significant impact on the five purposes of including land in the Green Belt and represents an appropriate extension of Breaston to accommodate growth in the Borough in a sustainable location.

Summary and Conclusions

As noted above, whilst our client supports the authority's approach in releasing land from the Green Belt to accommodate growth, as discussed in detail above, there are significant concerns with the Regulation 19 Consultation as there is a very limited evidence base to justify the authority's proposed approach. Therefore, we do not consider the consultation meets the tests of soundness as required under Paragraph 35 of the NPPF as it has not been positively prepared or justified.

Prior to any submission of the draft Core Strategy Review to the Secretary of State for Examination, we request that the authority publish the supporting evidence base for a re-consultation process. Our client's site, which is in the Green Belt, has been demonstrated above to be a suitable and deliverable site, and one that would not conflict with the purposes of including land within the Green Belt and should be reconsidered by the authority as a proposed allocation.

We trust that our representations will be taken into account as part of the ongoing preparation of a Core Strategy Review.

Yours faithfully,

Kam Saini
Director
CarneySweeney

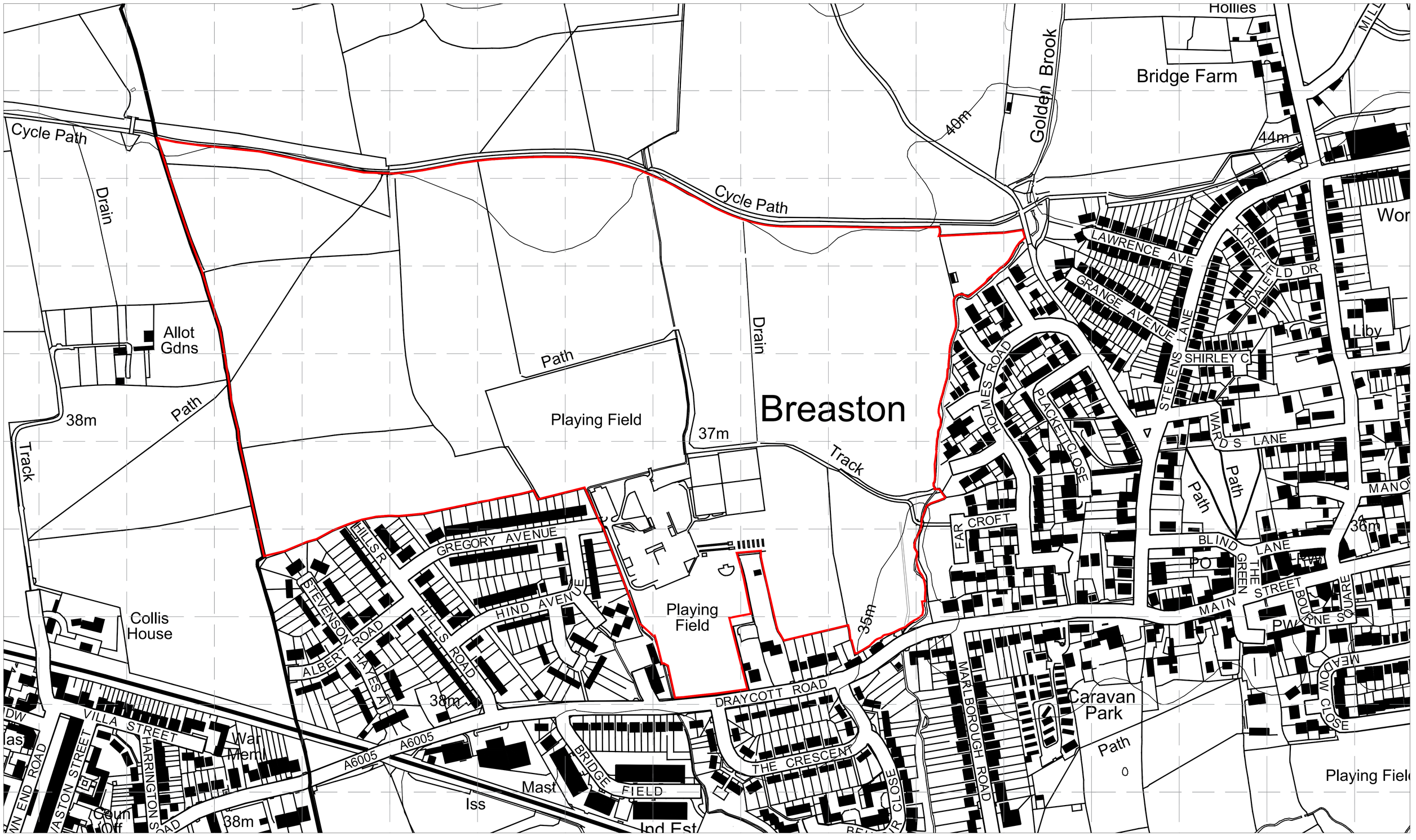
Enc.

APPENDICES

Appendix 1	Location Plan – Land off Draycott Road, Breaston
Appendix 2	Copy of Erewash Borough Council's Regulation 19 Consultation webpage.
Appendix 3	Copy of Representations issued to Erewash Core Strategy Review – Revised Options for Growth (May 2021)
Appendix 4	Hydraulic Modelling Study - land off Draycott Road, Breaston
Appendix 5	Indicative Masterplan for land off Draycott Road, Breaston

Appendices

Appendix 1



Project: Breaston, Draycott Road Drawing: Location Plan	Drawing No. BRE-LP-03
	Revision. /
	Scale. 1:1000 @ A1
	Date. 05.05.2022 Drawn. ARB

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Project: Breaston, Draycott Road Drawing: Location Plan	Drawing No. BRE-LP-05
	Revision. /
	Scale. 1 :1250 @ A1
	Date. 05.05.2022 Drawn. ARB

Appendix 2

The Core Strategy Review

Plan Publication Version (Regulation 19)

At the Full Council meeting on Thursday 03 March 2022, councillors approved an eight-week consultation on the draft Core Strategy Review (Publication Version). Taking into account previous consultation responses from 2020 to 2021, the document now contains several draft policies containing the following:

Housing strategy and allocation sites;
Employment;
Town, Local and Village Centres;
Transport and
Green Infrastructure

Development of these policies has been guided by the work of a comprehensive Sustainability Appraisal (SA). The SA has helped to provide an understanding of impacts from the emerging policies and reduce any anticipated effects on key environmental, social and economic objectives.

The consultation is open from Monday 14th March to Monday 9th May 2022 and you can make your comments by completing the Online Representation Form. All papers associated with the current consultation can be found on the downloads and links section of this webpage. Downloadable versions of the documents can also be found on the Full Council Webpage (https://moderngov.erewash.gov.uk/ieListDocuments.aspx?CId=116&MId=1979&Ver=4) at Section 9.

Any enquiries, including requests for hard copies of the information or form, can be directed to the Planning Policy team by:
Email – planningpolicy@erewash.gov.uk (mailto:planningpolicy@erewash.gov.uk)
Phone – (0115) 9072244 ext. 3150

Links

Core Strategy Review Representation Form
(/local-plan-section/representation-form.html)

Core Strategy Review Representation Form Guidance
(This is a guidance note to help those submitting a representation using the electronic form to properly complete it)
(/local-plan-section/representation-form-guidance.html)
Core Strategy Review Policy Document
(/categories/planning/1436-core-strategy-review-policy-document.html)
Main Sustainability Appraisal (/categories/planning/1439-main-sustainability-appraisal.html)

Full Council Report (/categories/planning/1438-council-report.html)

Habitats Regulation Assessment - Screening Exercise (/local-plan-section/habitats-regulations-assessment.html)

Downloads:


Core Strategy Policies Map (/component/jdownloads/?task=download.send&id=112&catid=22&m=0&Itemid=435) 8.19 MB


Statement of Consultation (/component/jdownloads/?task=download.send&id=127&catid=22&m=0&Itemid=435) 1.23 MB


Strategic Growth Area Assessments (/component/jdownloads/?task=download.send&id=125&catid=22&m=0&Itemid=435) 2.23 MB


Strategic Growth Area Assessments map book (/component/jdownloads/?task=download.send&id=126&catid=22&m=0&Itemid=435) 18.7 MB


Sustainability Appraisal Appendices A1 (/component/jdownloads/?task=download.send&id=113&catid=22&m=0&Itemid=435) 941.47 KB


Sustainability Appraisal Appendices A2 (/component/jdownloads/?task=download.send&id=114&catid=22&m=0&Itemid=435) 704.43 KB


Sustainability Appraisal Appendices A3 (/component/jdownloads/?task=download.send&id=115&catid=22&m=0&Itemid=435) 1.07 MB


Sustainability Appraisal Appendices A4 (/component/jdownloads/?task=download.send&id=116&catid=22&m=0&Itemid=435) 923.47 KB


Sustainability Appraisal Appendices Appendix C1 (/component/jdownloads/?task=download.send&id=117&catid=22&m=0&Itemid=435) 745.98 KB


Sustainability Appraisal Appendices Appendix D1 (/component/jdownloads/?task=download.send&id=118&catid=22&m=0&Itemid=435) 665.54 KB

Appendix B1 - SGA1, 2, 3 & 5 (/component/jdownloads/?task=download.send&id=119&catid=22&m=0&Itemid=435) 1.06 MB

Appendix B2 - SGA6, 7, 10 & 11 (/component/jdownloads/?task=download.send&id=120&catid=22&m=0&Itemid=435) 1.07 MB

Appendix B3 - SGA13, 15, 16 & 17 (/component/jdownloads/?task=download.send&id=121&catid=22&m=0&Itemid=435) 1.09 MB

Appendix B4 - SGA19, 20, 21 & 22 (/component/jdownloads/?task=download.send&id=122&catid=22&m=0&Itemid=435) 1.09 MB

Appendix B5 - SGA23, 24, 25 & 26 (/component/jdownloads/?task=download.send&id=123&catid=22&m=0&Itemid=435) 912.84 KB

Appendix B6 - SGA27, 28, 29, 30 & 31 (/component/jdownloads/?task=download.send&id=124&catid=22&m=0&Itemid=435) 1.28 MB

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0115 907 2244

Email the council (mailto:enquiries@erewash.gov.uk?subject=Website%20contact)

View our opening hours (/the-council-popular/contact-the-council.html)

Social media pages.

(https://twitter.com/ErewashBC) (https://www.facebook.com/erewashbc/) (https://www.erewash.gov.uk/youtube) (https://erewash.gov.uk/instagram)

Contents:

Spatial Portrait

The spatial structure of Erewash is as follows:

The Long Eaton Urban Area, including Long Eaton, Sandiacre, and Sawley, is part of the Nottingham Conurbation.
The Ilkeston Urban Area, including Kirk Hallam and the former Stanton Ironworks, is a freestanding town.
The villages and hamlets of Borrowash, Breadsall, Breaston, Church Wilne, Dale Abbey, Draycott, Hopwell, Little Eaton, Morley, Ockbrook, Risley, Stanley, Stanley Common, Stanton-by-Dale and West Hallam comprise the Rural Area.

Erewash Borough has a population of 115,300 (ONS 2020), with around three quarters living in the two Urban Areas adjoining the county boundary with Nottinghamshire. Ilkeston and Long Eaton make up the majority of the Urban Areas. The Long Eaton Urban Area geographically forms part of the Nottingham conurbation, sharing its NG postcode. In contrast the Ilkeston Urban Area to the north is spatially separated from the conurbation, with its own Derbyshire postcode.

The remainder of the Borough is predominantly rural, with 15 villages and hamlets being located within the Erewash countryside. Nearly all of this countryside is designated as Green Belt, amounting to over 70% of the land within the Borough. This is an important component of the wider Nottingham-Derby Green Belt, the main function of which is to prevent the merger of those two conurbations. The settlements on the western edge of the Borough, including Borrowash, Breadsall, Little Eaton, Morley and Ockbrook, are strongly related to and influenced by services, facilities, and transport provision which help to connect them to the city of Derby.

Erewash is well linked to the strategic road and rail network. A combination of trunk and motorway routes pass through the Borough including the M1, A52, and A38, which provide connections to nearby towns and cities. Sandiacre, at the northern end of the Long Eaton Urban Area, directly adjoins Junction 25, an important road interchange between the M1 and A52, whilst Sawley, at the southern end of the Long Eaton Urban Area, has direct access to the A50. The opening of the last phase of the Awsworth By-Pass has enhanced road accessibility between Ilkeston and Junction 26 of the M1.

Long Eaton railway station provides direct services to Nottingham and Derby, but also further afield to Sheffield, Birmingham and London. The re-opening of Ilkeston Railway Station in 2017 has restored direct rail services from that town to Nottingham, Sheffield and Leeds. Frequent bus services operate across Erewash, with the two main towns having regular direct links to the city centres of Nottingham and Derby. The central and north west rural parts of the Borough are not as accessible as a result of indirect road links. Consequently, the range of public transport routes serving these areas is more limited.

East Midlands Airport is only three miles south of the Borough. The domestic and international passenger and freight services from the airport add to the Borough's general level of accessibility.

The Borough is bounded to the east, south and west by the Erewash, Trent and Derwent rivers. Extensive parts the Borough form part of the functional floodplains of those rivers, and thus contribute to natural flood management. However, extensive parts of the built up areas of Long Eaton and Sawley are also subject to flood risk, which is controlled by the Left Bank Scheme, a major flood defence along the River Trent floodplain.

Strategic Policy 1 – Housing

1. Erewash Borough has an Objectively Assessed Housing Need of 5,800 net new homes over the time period 2022 and 2037.
2. The settlement hierarchy to accommodate this growth is as follows:

    a. Growth within Long Eaton Urban Area (conurbation);
    b. Growth within Ilkeston Urban Area (town);
    c. Growth within the Rural Area settlements (villages);
    d. New Settlement on brownfield land not in the Green Belt (former Stanton Ironworks);
    e. Extension of conurbations into the Green Belt (Derby and Nottingham); and
    f. Extension of towns into the Green Belt (Ilkeston).

3. In keeping with the settlement hierarchy, a minimum of 5,800 new homes (2022-2037) will be distributed as follows:

a. Around 700 homes within the Long Eaton Urban Area;
b. Around 1,400 homes within the Ilkeston Urban Area;
c. Around 350 homes within the Rural Area
d. Around 1,000 homes in a new settlement at South Stanton;
e. Around 800 homes as extensions to the Derby conurbation on land deallocated from the Green Belt, including around 600 homes on land west of Acorn Way and around 200 homes on land north of Spondon; and
f. Around 1,550 homes as extensions to the town of Ilkeston, on land deallocated from the Green Belt including around 1,300 homes on land south west of Kirk Hallam and around 250 homes on land north of Cotmanhay.

The spatial strategy flows from the spatial portrait set out earlier in the document. It is aspirational but realistic, and has been positively prepared to meet the objectively assessed development requirements of the area as set out in the evidence base, and provides a framework and context for the other policies of the plan.

Strategic Policy 1.1 – Strategic Housing Sites

Applications for strategic housing developments of 200 or more homes shall:

1. Establish a coherent and quality design for the proposed new neighbourhood that respects its settlement context;
2. Maintain and enhance, where possible, existing hedgerow and tree belt boundaries with the open countryside;

3. Integrate sufficient tree planting, sustainable drainage infrastructure, suitable play areas and other safe and functional public open spaces into the layout and design;
4. Deliver an appropriate level of biodiversity net gain;
5. Be based on a network of streets that prioritise walking, wheelchair use and cycling over motorised transport;
6. Provide at least one off-street parking space per new home served by an electric vehicle charging point; and
7. Ensure that each parking space provided is well related to the home it is intended to serve, and does so without dominating the street-scene.

The National Planning Policy Framework has been amended to take account of the findings of Living with Beauty, the report of the Building Better, Building Beautiful Commission. This is further implemented by the National Design Guide and the Model National Design Code, which set out the factors that need to be considered in order to ensure that new development contributes towards beautiful, safe, sustainable and distinctive places.

The strategic housing allocations of this plan provide unique opportunities for creating beautiful and sustainable places, as would other proposals of a strategic scale. Developers will be expected to produce their own design codes that set out their vision of how they will make the most of those opportunities. The requirements of this policy set out clear expectations for such codes, and for the quality of development produced in accordance with them.

Each strategic site has its own settlement context, either as an extension to an existing settlement or by creating a new settlement. Consequently each proposal will need to take account of its own unique set of historical contexts, whilst also contributing its own distinctiveness to that context.

Strategic sites will be expected to include suitable greenspace that takes account of local context, improves biodiversity, and adapts to climate change through providing seasonal shade and sustainable drainage infrastructure. The need for green space and space for trees in particular should be designed into layouts, such as squares, crescents and avenues, and not just left to undevelopable areas under power-lines, over sewers, or in inaccessible corners.

The street is an urban form that has proved successful since the dawn of civilization. Though streets include roads, the road should never be the dominant design feature. With the sale of petrol and diesel vehicles being banned by 2030, off-street vehicle recharging will be necessary to future proof new homes as well as to contribute to the mitigation of climate change. Poorly located car parking provision does not make for safe or comfortable neighbourhoods. Street frontages dominated by forecourt parking will not be acceptable.

Strategic Policy 1.2 – South Stanton

Land at South Stanton as shown on the Policies Map is allocated for strategic residential development of around 1,000 new homes, a new primary school. and new village centre across 47 hectares of land. The development will form a new community associated with the Ilkeston Urban Area.
Development shall provide the following:

1. Comprehensive remediation of the land to a suitable standard to support residential development;
2. Multiple vehicular accesses onto Lows Lane;
3. Financial contributions to provide a new roundabout to replace the Lows Lane / Sowbrook Lane / Ilkeston Road junction;
4. Financial contributions to provide bus services to the new development
5. Enhanced and new bus halts with safe pedestrian access, including suitable pedestrian crossings where appropriate;
6. A pavement along the east side of Littlewell Lane to Stanton-by-Dale;
7. Suitable pedestrian links to Stanton-by-Dale Footpaths 5, 7 & 9 to link the new development to the wider countryside, including a safe pedestrian crossing of Littlewell Road to Stanton-by-Dale Footpath 9;
8. A new village centre on Lows Lane with safe pedestrian and cycling access;
9. A new primary school well located within the site to encourage access by active travel;
10. Financial contributions towards the provision of additional pupil capacity at nearby schools where necessary; and
11. 10% of the homes provided to be for affordable home ownership, subject to viability.

This policy should be read alongside Strategic Policies 3 (Town, Local and Village centres) and 4 (Transport).

The former Stanton Ironworks has been considered suitable and available for housing by both the Local Planning Authority and the current landowner for over 10 years. Nevertheless, development has yet to be achieved and is not anticipated in the first 5 years of this plan. The slow progress of the site has been largely due to market uncertainty over the cost of mitigating land stability issues from its mining legacy, and land contamination from its industrial legacy.

It is anticipated that successful development of North Stanton for employment as proposed elsewhere in this plan will establish the degree of market challenge posed by historic mining and industrial activity at the former Stanton Ironworks, and thus increase market confidence in this site.

Lows Lane provides the main vehicle route alongside the site to both Ilkeston and towards Nottingham, and is envisaged as the principal point of access to the local road network. Multiple vehicle access points will be required onto Lows Lane in order to provide network resilience for the new development.

Traffic modelling has shown that the redevelopment of this site will push the existing junction at Lows Lane / Sowbrook Lane / Ilkeston Road into failure. Provision of the replacement junction proposed elsewhere in this plan will therefore be required.

South Stanton is poorly served by local bus routes, with just the subsidised hourly No.14 service running along Littlewell Lane to Ilkeston and Sandiacre. A substantial improvement in bus services will be required, either as a reinforcement of services along Littlewell Lane, new services along Lows Lane, or a combination of both. These services will require improved and new bus halt provision.

Development of this scale is sufficient to support a new primary school, which should therefore be provided by the development. The primary school will

for educational needs, but will also make a major contribution to the establishment of the new community at South Stanton.

Children living in the new development could attend secondary schools in Kirk Hallam, Ilkeston or Sandiacre. Where there are insufficient available places at those schools to accommodate those new pupils, financial contributions from the new development will be required to increase the capacity of the receiving schools.

Government policy requires 10% of new homes on large sites to provide affordable routes to home ownership, where this is viable. Viability will be limited by the relatively low housing values in Ilkeston, the abnormal development costs imposed by the mining and industrial legacy here, and the need to provide the other infrastructure and facilities described above.

Strategic Policy 1.3 – Acorn Way

Land west of Acorn Way as shown on the Policies Map is allocated for strategic residential development of around 600 homes across 26 hectares of land that will extend the Derby neighbourhood of Oakwood.

Development shall provide for the following:

1. Creation of at least two new vehicular junctions with suitable pedestrian access onto Morley Road;
2. Financial contributions to increase the frequency of bus services along Morley Road;
3. Improved multi-user crossings of Acorn Way to encourage safe use of Morley Byway 29 and Morley Foot Paths 31 & 32 into the open countryside;
4. Financial contributions towards the provision of additional pupil capacity at schools in Oakwood and Chaddesden where necessary; and
5. 10% of the homes provided to be for on-site affordable home ownership, and a financial contribution towards off-site affordable housing in lieu of providing up to 20% of the homes as additional affordable housing, subject to viability.

This site is suitable and available for housing, and will form a natural and logical extension to the Derby neighbourhood of Oakwood.

Access onto Morley road is available, and would help to integrate the new development with the existing neighbourhood of Oakwood. Such junctions should include pavements and be linked to additional pavements and crossings on Morley Road to allow safe pedestrian access to the existing Besthorpe Close and Morley Gardens bus halts. These facilities should also provide for safe pedestrian through journeys onto Oakwood Drive, Besthorpe Close, and the footpaths leading to Bassingham Close / Gainsborough Close / Kirkstead Close and Kirkstead Close / Fiskerton Way / Seagrave Close. An internal road network with at least two interconnected junctions on to Morley Road is the minimum necessary to provide network resilience for the new development. Vehicular access Acorn Way should be avoided to prevent harm to the substantive tree belt feature here, and to avoid feeding traffic directly into the congested Acorn Way

Road roundabout.

Morley Road is currently only served by one bus each way per hour, the Black Cat service between Derby and Mansfield. A financial contribution to support additional services per hour, either a more frequent Black Cat service or an alternative service to Derby, will be required to make public transport use a viable option for the residents of the new development.
Access into the open countryside is available along Morley Byway 29 and Morley Footpaths 31 & 32. Improved safe crossings of Acorn Way, which has a 60mph speed limit and limited forward visibility, will be required to encourage use of those links to enjoy the wider Erewash countryside.

Children living in the new development are likely to attend nearby schools in Oakwood and Chaddesden. Where there are insufficient available places at those schools to accommodate those new pupils financial contributions from the new development will be required to increase the capacity of the receiving schools.

Government policy requires 10% of new homes on large sites to provide affordable routes to home ownership. Erewash planning policy requires that up to an additional 20% should be provided for other forms of affordable housing. However, as the demand for affordable housing in this part of Erewash is limited, that public benefit would be better utilised by accepting a financial payment in lieu of on-site provision in order to fund provision in locations of higher demand.

Strategic Policy 1.4 – North of Spondon

Land north of Spondon as shown on the Policies Map is allocated for strategic residential development of around 200 homes across 12.3 hectares of land that will extend the community of Spondon.
Development shall provide for the following:

1. Creation of a new vehicular junction and pedestrian access on to the A6096 Dale Road, associated pair of bus halts, and a pavement along the west side of the A6096 Dale Road to Spondon. To be achieved whilst minimising disturbance to the Dunshill Shelterbelt local wildlife site along part of the site's eastern boundary;
2. Provision of a suitable interface between the development and Spondon Wood, to include a semi-natural buffer zone, to protect the biodiversity interest of the wood;
3. An extension of Dale Abbey Footpath 58 into the site;
4. Financial contributions towards the provision of additional pupil capacity at schools in Spondon where necessary; and
5. 10% of the homes provided to be for on-site affordable home ownership, and a financial contribution towards off-site affordable housing in lieu of providing up to 20% of the homes as additional affordable housing, subject to viability.

This site is suitable and available for housing, and will form a natural and logical extension to the community of Spondon.Access directly onto the A6096 is available and suitable to serve the development. Pavements and bus halts will provide sustainable access to the facilities available in Spondon.

Spondon Wood includes areas of ancient woodland. To protect its flora and fauna a suitable interface will avoid private gardens backing onto the site, expose the edge of the wood to natural surveillance, and prevent unregulated vehicular access.

Children living in the new development are likely to attend schools in Spondon. Where there are insufficient available places at those schools to accommodate those new pupils, financial contributions from the new development will be required to increase the capacity of the receiving schools.

Government policy requires 10% of new homes on large sites to provide affordable routes to home ownership. Erewash planning policy requires that up to an additional 20% should be provided for other forms of affordable housing. However, as the demand for affordable housing in this part of Erewash is limited, that public benefit would be better utilised by accepting a financial payment in lieu of on-site provision in order to fund provision in locations of higher demand.

Strategic Policy 1.5 – South West of Kirk Hallam

Land south west of Kirk Hallam as shown on the Policies Map is allocated for strategic residential development of around 1,300 new homes, a new primary school, a new local centre, an extension to the Pioneer Meadows Local Nature Reserve, and a relief road across 50 hectares of land. The development will form an extension to the community of Kirk Hallam. An additional 27ha of open land between Kirk Hallam and the former Stanton Ironworks is allocated as Green Belt.

Development shall provide for the following:

1. Multiple vehicular accesses from the associated Kirk Hallam Relief Road;
2. Additional bus halts on the A6096 Ladywood Road with safe pedestrian access from the new development, including a suitable crossing of the A6096 Ladywood Road;
3. Pedestrian and cycling access from the new development to bus halts on St Norbert Drive;
4. Enhancement of Dale Abbey Footpath 2 and Dale Abbey Footpath 49 that link Kirk Hallam and the new development to the wider countryside, including safe pedestrian crossings of the Kirk Hallam Relief Road;
5. A green corridor through the site to link Pioneer Meadows Local Nature Reserve to the wider countryside;
6. A new local centre at the junction of the Kirk Hallam Relief Road with the A6096 Ladywood Road with safe pedestrian and cycling access;
7. A new primary school well located within the site to encourage access by active travel;
8. Financial contributions towards the provision of additional pupil capacity at schools in Kirk Hallam where necessary; and

9. 10% of the homes provided to be for affordable home ownership, subject to viability. This policy should be read alongside Strategic Policies 3 (Town, Local and Village centres), 4 (Transport) and 5 (Green Infrastructure).

This site is suitable and available for housing. Land to the south east of this site is added to the Green Belt to ensure the continued separation of Kirk Hallam from Stanton. The housing development here is required to fund the proposed Kirk Hallam Relief Road. Conversely the housing proposals require the Kirk Hallam Relief Road to provide vehicular access, and to provide the defensible boundary with the Green Belt required to help justify development of this site. Consequently the delivery of the housing and the road will require careful phasing. Multiple vehicle access points will be required onto the relief road in order to provide network resilience for the new development.

Kirk Hallam is well served by existing bus routes, but pedestrian improvements will be required to enable residents living in the new development to access them. Access to the Ilkeston to Derby services along Ladywood Road will require a new pair of bus halts served by pavements and a suitable road crossing. These facilities should be further integrated into safe walking and cycling access along Ladywood Road to help link the new development, including the proposed local centre, into Kirk Hallam. Existing pedestrian access points onto Wirksworth Road also need to be enhanced to provide onward access to the frequent bus services to Heanor via Ilkeston on St Norbert Drive. These improvements should be integrated with the existing public rights of way across the site to provide a comprehensive walking and cycling network. This will need to include safe crossing of the Kirk Hallam Relief road to encourage recreational access into the open countryside.

Pioneer Meadows Local Nature Reserve is a highly valued local asset. To maintain its wildlife interest a green corridor through the development site along the Sowbrook to the open countryside will be required. This green corridor will also provide flood management and recreational access benefits, and should be positively managed so that it can be added as a physical extension of Pioneer Meadows Local Nature Reserve.

Development of this scale is sufficient to support a new primary school, which should therefore be provided by the development. The primary school will provide for educational needs, but will also make a major contribution to the establishment of a new community in this part of Kirk Hallam.

Children living in the new development will expect to attend secondary schools in Kirk Hallam. Where there are insufficient available places at those schools to accommodate those new pupils, financial contributions from the new development will be required to increase the capacity of the receiving schools.

Government policy requires 10% of new homes on large sites to provide affordable routes to home ownership, where this is viable. Viability will be limited by the relatively low housing values in Kirk Hallam, the abnormal development costs of providing the new Kirk Hallam Relief road, and the need to provide the other infrastructure and facilities described above.

Strategic Policy 1.6 – North of Cotmanhay

Land north of Cotmanhay as shown on the Policies Map is allocated for strategic residential development of around 250 homes across 7.2 hectares of land that will widen the range and choice of housing to buy in Cotmanhay, and make Cotmanhay Wood accessible as an enhanced community asset.

Development shall provide for the following:

1. Widening and otherwise improving the access along Woodside Crescent to Heanor Road to provide a suitable and safe vehicular and pedestrian access to the development;
2. Provision of a suitable interface between the development and Cotmanhay Wood, to include a semi-natural buffer zone, to protect the biodiversity interest of the wood;
3. Bringing Cotmanhay Wood into use as a Community Woodland through active management, including the provision of managed public access with a link to and enhancement of Ilkeston Footpath 5;
4. Biodiversity improvements to Cotmanhay Wood to suitably offset the biodiversity impacts of the development, including extending the wood onto the field to the north-east if required;
5. Financial contributions towards the provision of additional pupil capacity at local Ilkeston schools where necessary; and
6. 10% of the homes provided to be for affordable home ownership, subject to viability.

This site is suitable and available for housing. In an area characterised by 3-bed social and privately rented houses the new neighbourhood here would provide additional opportunities for aspirational residents to stay in the area. The development provides an opportunity to enhance the neglected asset of Cotmanhay Wood.

The current access along Woodside Crescent is not adequate to support a development of this scale, and will need to be significantly improved to meet the requirements of the County Highway Authority.

Cotmanhay Wood includes areas of ancient woodland. To protect its flora and fauna, a suitable interface will avoid private gardens backing onto the site, expose the edge of the wood to natural surveillance, and prevent unregulated vehicular access.

Managed pedestrian access will encourage appropriate use of the wood and, through increased natural surveillance, discourage inappropriate use.

Positive woodland management, including selective thinning to allow trees to grow to maturity and increase light to the woodland floor, will improve the biodiversity of this ancient woodland. The field to the north-east is already surrounded by the woodland on three sides and could form a natural extension to the wood.

Children living in the new development will normally attend Cotmanhay Junior & Infants School and the Ormiston Ilkeston Enterprise Academy. Where th insufficient available places at those schools to accommodate those new pupils, financial contributions from the new development will be required to incr

capacity of the receiving schools.

Government policy requires 10% of new homes on large sites to provide affordable routes to home ownership, where this is viable. Viability will be limited by the relatively low housing values in Ilkeston, the abnormal development foundation costs involved in redeveloping this former opencast site, and the need to provide the infrastructure and facilities described above.

Strategic Policy 2 – Employment

The economy of Erewash will be maintained, strengthened and diversified with new development being provided to meet restructuring, modernisation and inward investment needs. This will be achieved by:

a. Protecting the following strategic employment sites to maintain a supply of good quality land and premises for industrial and warehouse uses:

Acton Road/Fields Farm Road Industrial Estate (32ha);
Quarry Hill Road Industrial Estate (22ha);
Gallows Inn Industrial Estate (10ha); and
Manners Industrial Estate (27ha).

b. Providing at least 40 hectares of high quality employment development at Stanton North to meet the identified needs for new and relocating industrial and warehousing/logistics uses (use classes B2 and B8).
c. Supporting economic development of an appropriate scale to diversify and support the rural economy.

Four strategic employment sites, three in Ilkeston and one in Long Eaton, totalling 91 hectares in size have been identified in recognition of the major contribution each makes to the Borough's economy. Each area supports a sizeable and diverse range of industrial operations offering significant employment opportunities. Protecting these four strategic employment areas is therefore necessary to safeguard the land and premises within them for industrial and warehousing uses over the long-term.

The provision for 40 hectares of high quality employment uses at Stanton North originates from work undertaken by the 2021 Employment Land Need Study. The study was prepared in conformity with provisions from the National Planning Practice Guidance setting out how councils should calculate future employment land requirements.

The rural part of the Borough plays an important role in supporting Erewash's economy. The continued importance of agriculture, recreation and other countryside-

related activities contribute to Erewash's economic diversity. Development which helps to strengthen Erewash's rural economy and which provides a source of local employment opportunities will be supported. National planning policy provides guidance on the appropriate form and scale of rural development and advises on how best to encourage proposals that will help the rural economy to diversify.

Strategic Policy 2.1 – Stanton North

Land at Stanton North as shown on the Policies Map is allocated for strategic employment development across 80 hectares of land. The development shall include:

1. Appropriate site remediation to safeguard human health and the environment;
2. Reconnection of the site to the national rail network via the Stanton Branch Line to widen options for the movement of freight to and from the site;
3. Preservation and enhancement of the existing green infrastructure features on site through integration with the adjacent Nutbrook and Erewash Strategic Green Infrastructure Corridors;
4. Offsetting measures as necessary to achieve appropriate biodiversity compensation; and
5. Safeguarding of land to allow the installation of a new roundabout to replace the existing junction of Sowbrook Lane, Lows Lane and Ilkeston Road, and off-site works as appropriate to safeguard the amenities of Stanton-by-Dale, Risley and Sandiacre from increased traffic.

This policy should be read alongside Strategic Policies 4 (Transport) and 5 (Green Infrastructure).

This 80ha site is expected to deliver up to 55ha of employment land, which is more than adequate to meet the assessed needs of the Borough. The rest of the site is needed to contribute towards transport and green infrastructure priorities.

Stanton's long industrial history has left a legacy of ground contamination across the wider site. Within the extent of the Stanton North allocation, ground conditions have been recently assessed as part of previous efforts to secure permission for site redevelopment. Comprehensive ground surveys have ascertained the type and specific locations of contaminants present on or close to the site's surface. Prior to the allocation's development, a comprehensive remediation strategy must show how ground contamination is to be dealt with through a site wide remediation strategy.

The reconnection of a direct rail spur linking Stanton North to the national rail network will be required. The utilisation of the rail spur by freight services would help to minimise the number of HGV movements to and from the site, reducing pressure on the local road network.

Parts of the site make a direct contribution to the Nutbrook and Erewash Strategic Green Infrastructure Corridors respectively. Those existing flood plain, biodiversity and recreational route assets should be maintained and enhanced by integration into a managed network of green spaces across the site, cr

link between the two Strategic Green Infrastructure Corridors where possible. In particular, an improved link between the Nutbrook Trail and Erewash Valley Trail should be provided. Sustainable drainage infrastructure, where compatible with the remediation strategy, should also be integrated into this network as should on-site biodiversity enhancements.

Notwithstanding the potential to preserve and enhance the biodiversity interest of parts of the site, redevelopment of the redundant ironworks site will result in the loss of habitats and species that have partly reclaimed it, including parts of the designated Ilkeston Road Pond & Nutbrook Canal Local Wildlife Site, and of the Stanton Ironworks Local Wildlife Site. Where that loss cannot be avoided or mitigated on-site, then off-site enhancements will be required to offset that harm to biodiversity.

Strategic Policy 3 – Town, Local and Village Centres

The following hierarchy of centres is designated on the Policies Map:

Town Centres – Ilkeston and Long Eaton;
Local Centres – Borrowash and Sandiacre; and
Village Centres – Breaston, Draycott, Little Eaton, and West Hallam.

In addition, the following new centres are proposed on the proposals map:
Proposed Local Centre – Kirk Hallam (including a local supermarket of around 1,000-1,500 sqm gross internal area and a parade of smaller shops amounting to a similar floorspace); and
Proposed Village Centre – South Stanton (including a neighbourhood convenience store of around 500-750sqm gross internal area and a parade of smaller shops amounting to a similar floorspace).

Within designated and proposed centres, the following types of development will be encouraged at a scale appropriate to the position of that centre in the hierarchy:

Ground floor commercial, service and community uses, including pubs and takeaways;
Offices and studios;
Upper floor residential uses;
Public realm enhancements;
Sustainable transport provision; and
Proposals to revitalise existing markets

In rural areas and villages without a designated centre, the re-use of existing buildings for retail, office and indoor leisure uses of an appropriate scale will be supported.
Other applications for retail, office or indoor leisure uses outside designated centres will be refused where:

a. a suitable site in an appropriate town, local or village centre is available, or;
b. for proposals in out of centre locations, a suitable edge of centre site is available; or
c. the impact on investment, vitality, viability or local consumer choice of centres within the catchment of proposals of 2,500m2 of gross floorspace or more is significantly adverse.

Ilkeston town centre has recently supported notable residential development including the conversion of the upper floors of the former Co-Op Department Store and on land rear to the former Poplar Inn, with similar regeneration programmes being encouraged to help meet the Borough's housing supply. Ilkeston had vacancy rate of 10% of town centre units recorded in 2020, which is on a par with the national average. Regeneration projects are encouraged throughout the town centre to bring vacant units back into vibrant uses.

Long Eaton has successfully secured £24.8million of government funding for the Long Eaton Town Investment Plan, which includes a range of regeneration projects to transform the town centre. Though 11% of all town centre units were vacant in 2021, this is only marginally more than in Ilkeston, and is comparable to the national average. Opportunities exist to diversify the centre, such as encouraging food and drink establishments on the High Street and Market Place and utilising outside space to add to the vibrancy of the centre. This will be facilitated by proposals in the Town Investment Plan to create an improved pedestrian zone in the town centre.

The local centres of Borrowash and Sandiacre serve important roles in meeting the retail needs of communities in the two locations. Vacant and underused sites in Sandiacre local centre provide regeneration opportunities that should support the local centre's continued vitality.

A new local centre will be created on land deallocated from the Green Belt immediately to the west of Kirk Hallam, in conjunction with the development of a new neighbourhood there. The local centre scale and prominent location on the A6096 Ladywood Road is intended to create a sustainable centre that can serve the whole of Kirk Hallam, despite its edge of settlement location.

Breaston, Draycott, Little Eaton and West Hallam have well established village centres which provide essential services to local residents. They should continue to be attractive retail and service destinations. New residential development may also be appropriate at upper floor levels but should respect the character and vitality of the centres.

A new village centre will be created at South Stanton as part of the new community proposed there. A prominent location on Lows Lane will help to supp sustainability of that centre, which is necessary to make the South Stanton proposal a functioning new community.

In smaller villages and wider rural areas that do not benefit from a designated village centre, small scale re-use of existing buildings for retail, office and indoor leisure uses can be appropriate to support rural diversification and village vitality. The Use Class Order defines a shop for local community use as being of less than 280 square metres in size, and that is considered to be a suitable upper limit on the acceptable scale of such facilities.

The NPPF sets out a national requirement to subject main town centre uses to a sequential test that directs such investment to appropriate designated centres.

Strategic Policy 4 – Transport

The following transport infrastructure will be provided:

1. The Kirk Hallam Relief Road linking the A6096 Ladywood Road with Sowbrook Lane will be provided by the strategic housing development of land south west of Kirk Hallam. The relief road will provide vehicular and multi-user access to the strategic housing development, maintain recreational access from Kirk Hallam to the wider countryside along existing public rights of way, and incorporate tree and hedge planting along its south western boundary to reduce its landscape impact on the open countryside beyond;

2. The Borough Council will utilise funding opportunities including developer contributions to replace the Lows Lane / Sowbrook Lane / Ilkeston Road T-junction with a roundabout in a new location to the north-east of the current junction. Land for the new roundabout and its access roads shall be safeguarded from development that would prejudice the delivery of this project;

3. To provide for high quality walking and cycling networks and widen transport choice, the Borough Council will utilise funding opportunities, including developer contributions, to accommodate the improvement of the Trent Valley Way and Great Northern Greenway to multi-user standard to the extents shown on the Policies Map.

These three transport infrastructure priorities, in culmination, will work to mitigate impacts from proposed growth within the Borough by improving sustainable transport provision in coordination with planned growth.

The Kirk Hallam Relief Road Priority is a policy response to the spatial strategy and proposed growth in Ilkeston, particularly at land south west of Kirk Hallam. Apart from providing direct access to the housing allocation south west of Kirk Hallam, it is required to ensure growth at this location is sustainable and tc
a new defensible Green Belt boundary as well as a landscape buffer between the Green Belt and housing allocation.

The replacement roundabout junction at Lows Lane / Sowbrook Lane / Ilkeston Road is a policy response to the proposals for the new settlement at South Stanton. Transport modelling of proposals here have shown a propensity for strong growth in traffic turning down Sowbrook Lane, with consequent failure of this already sub-standard junction. Redevelopment of the South Stanton site will therefore require this junction to be upgraded to a roundabout to accommodate those increased flows. Such a junction improvement on the site of the existing junction would be detrimental to the setting of the Grade II listed New Stanton Cottages, known locally as Twelve Houses, so the new roundabout and its approach lanes would need to be located on safeguarded land to the north-east of that junction.

Two strategic recreational routes are identified for upgrading to multi-user (walking, cycling and horse riding) standards. The Great Northern Greenway is a long standing proposal of Derbyshire County Council that has been partly implemented. The policy proposes its completion, including the link to the recently improved route over Bennerley Viaduct. The proposal to upgrade the Trent Valley Way would effectively extend the Big Track from Attenborough Nature Reserve to Trent Lock, and thus connect to the Erewash Valley Way along Erewash Canal.

Strategic Policy 5 –Green Infrastructure

Strategic Green Infrastructure Corridors are designated on the proposals map as follows:

Trent Strategic Green Infrastructure Corridor;
Erewash Strategic Green Infrastructure Corridor;
Nutbrook Strategic Green Infrastructure Corridor; and
Derwent Strategic Green Infrastructure Corridor

The objectives of the Strategic Green Infrastructure Corridors are to provide:

Sustainable flood water management;
Biodiversity improvement, including natural carbon capture;
Active travel; and
Open space recreational uses.

Proposals within in the Strategic Green Infrastructure Corridors that further the objectives set out above will be supported. Proposals within the Strategic Green Infrastructure Corridors that detract from these aims will normally be refused.

Natural England describes Green Infrastructure as a strategically planned and delivered network comprising the broadest range of high quality green spaces and other environmental features. It should be designed and managed as a multifunctional resource capable of delivering those ecological services and quality of life benefits required by the communities it serves and needed to underpin sustainability. Its design and management should also respect and enhance the character and distinctiveness of an area with regard to habitats and landscape types. Green Infrastructure includes established green spaces and new sites and should thread through and surround the built environment and connect the urban area to its wider rural hinterland.

The Strategic Green Infrastructure Corridors designated here provide multiple natural assets including functional flood plains, land of designated wildlife importance, recreational facilities and recreational route ways. Due to their location adjacent urban areas these assets have a high social value, and the capacity for further enhancement.

The Trent Strategic Green Infrastructure Corridor lies to the south of Long Eaton and Sawley and borders Broxtowe to the east, and is made up of the River Trent and surrounding washlands. This corridor encompasses eight Local Wildlife Sites including seven wetlands and an area of neutral grassland. Trent Meadows Local Nature Reserve also sits within this corridor, as does the Spring Lakes and Trent Lock leisure facilities. Both the Trent Valley Way and Erewash Valley Trail run through this Strategic Green Infrastructure Corridor.

The Erewash Strategic Green Infrastructure Corridor runs along the eastern edges of Long Eaton and Ilkeston. This Strategic Green Infrastructure Corridor is fragmented in Erewash Borough due to its interrelationship with the main built up area, but achieves continuity through additional land in the adjacent Broxtowe Borough. The corridor includes the River Erewash washlands, and 14 Local Wildlife Sites including eight wetlands, five neutral grasslands and an area of secondary woodland. There are also Local Nature Reserves at Stanton Gate and Trowell Marsh, as well as the recreational facility of the Erewash Canal and associated National Cycle Route 67 along its towpath, forming part of the Erewash Valley Trail.

The Nutbrook Strategic Green Infrastructure Corridor includes the Nutbrook tributary to the Erewash River. Due to the culvert under part of the former Stanton Ironworks at Crompton Lane, the Nutbrook washlands covered by this corridor are not contiguous with those of the River Erewash. The Nutbrook Strategic Green Infrastructure Corridor incorporates 14 Local Wildlife Sites, including six wetlands, four secondary woodlands, two neutral grasslands and two areas of mosaic habitat. There are also five Local Nature Reserves: Pioneer Meadows, Straws Bridge, Pewit Carr, and Manor Floods. The Nutbrook Trail runs through the corridor carrying National Cycle Route 67 from the Erewash Canal south of Ilkeston to Shipley Country Park in Amber Valley Borough to the north of Erewash Borough.

The Derwent Strategic Green Infrastructure Corridor runs between Little Eaton and the western boundary of Erewash Borough with Derby City. The corridor incorporates the River Derwent washlands that are designated as part of the Derwent Valley Mills World Heritage Site on account of their relict landscape quality. The Derwent Strategic Green Infrastructure Corridor includes two Local Wildlife Sites, a wetland and a woodland, and part of the Derwent Valley Heritage Wav long distance footpath.

Enhancement to the green infrastructure in these corridors, including natural flood management, biodiversity improvement, new recreational facilities and improved and extended recreational route ways will be sought, encouraged and supported.

Erewash Borough Council will look to prioritise biodiversity enhancements within these areas, including through off-site provision of biodiversity enhancement generated by development elsewhere in the Borough.

Development Plan Policies to be Replaced by the Proposed Core Strategy

Erewash Core Strategy Policy 2: The Spatial Strategy
Erewash Core Strategy Policy 4: Employment Provision & Economic Development
Erewash Core Strategy Policy 6: The Role of Local and Town Centres
Erewash Core Strategy Policy 7: Regeneration
Erewash Core Strategy Policy 12: Local Services & Healthy Lifestyles
Erewash Core Strategy Policy 16: Green Infrastructure, Parks and Open Space
Erewash Core Strategy Policy 20: Stanton Regeneration Site
Erewash Local Plan Policy E5 - West Hallam Storage Depot
Erewash Local Plan Policy T5 – Disused Transport Routes
Erewash Local Plan Policy R1 – Recreational Trails
Erewash Local Plan Policy R6 – Pewit Golf Course
Erewash Local Plan Policy R8 - Water Recreation
Erewash Local Plan Policy C1 – School Sites

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 (https://erewash.gov.uk/instagram)

Draft Sustainability Appraisal of the Proposed Core Strategy Review January 2022

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1.1 Core Strategy review process:

In accordance with Government policy, the strategic policies of the Erewash Core Strategy (adopted in 2014) which deal with matters including housing delivery, economic growth, infrastructure delivery and the environment, are now deemed out of date as the document has exceeded five years since adoption. In response to this, a review of the Erewash Core Strategy has been initiated, culminating in the first stage of public consultation (Regulation 18) occurring in January 2020. This opening stage of the review focussed on potential strategic locations for housing growth within the Borough, culminating in the Growth Options document. This was supported by a Sustainability Appraisal that rigorously tested a set of potential growth options (the Strategic Growth Options Sustainability Appraisal).

Following consideration of the responses to the first stage of public consultation, the Revised Growth Options document was published alongside commencement of a second stage of Regulation 18 public consultation in March 2021. The original Strategic Growth Options Sustainability Appraisal continued to underpin this work and demonstrate the suitability of the proposed spatial hierarchy of growth.

The two stages of public consultation referenced above collectively amount to a completion of Regulation 18 (Issues and Options) stage of the Erewash (

Strategy Review. This document, which includes two additional components of the Sustainability Appraisal (on the topics of Policies and Allocations) has been prepared to inform Regulation 19 (Draft/Publication Local Plan) stage of the Erewash Core Strategy Review. The purpose of this document is to bring together all stages of Sustainability Appraisal – and ancillary work – undertaken to inform the Erewash Core Strategy Review to date.

1.2 The purpose of Sustainability Appraisal (SA):

The Planning and Compulsory Purchase Act 2004 introduced the requirement to carry out a Sustainability Appraisal as an integral part of the preparation of a new or a revised Local Plan. Sustainability Appraisal is an iterative process that should be undertaken throughout the preparation of a plan or strategy. The purpose of Sustainability Appraisal is to assess the economic, social and environmental impacts of plans or strategies (in this case, the policy proposals of a new Local Plan) so that the preferred option promotes, rather than inhibits, sustainable development. It also acts as a valuable tool for minimising adverse impacts and resolving as far as possible conflicting or contradictory outcomes of the plan or strategy.

Strategic Environmental Assessment (SEA):

European Directive 2001/42/EC requires local planning authorities to undertake an 'environmental assessment' of any plans and programmes they prepare that are likely to have significant effect upon the environment. This Directive was translated into legislation in the UK in July 2004. It remains a requirement of UK law despite the UK now having left the European Union. The main purpose of Strategic Environmental Assessment is to consider the key likely significant effects on the environment including on issues such as:- biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage, landscape and the interrelationship between the above factors.

Relationship between Sustainability Appraisal and Strategic Environmental Assessment:

Both Sustainability Appraisal and Strategic Environmental Assessment are similar processes that involve a comparable series of tasks. This document encompasses the requirements of both into a single Sustainability Appraisal process. More information on the background to the relationship between Sustainability Appraisal and Strategic Environmental Assessment can be found within the Scoping Report (2019) which is available as a separate document.

1.3 Sustainability Appraisal for the Erewash Core Strategy review

Several stages of Sustainability Appraisal have been carried out to support preparation of the new Local Plan. These stages are summarised below.

Scoping Report (2019):

The Scoping Report was carried out alongside the other Greater Nottingham Housing Market Area authorities. The purpose of the Scoping Report was to decide the scope and level of detail of the Sustainability Appraisal. It set out the information required to determine the scope of the Sustainability Appraisal, suggested a list of sustainability issues and set out the Sustainability Appraisal Framework against which the effects of the Erewash Core Strategy Review would be assessed. Statutory consultees were consulted on the Scoping Report (Environment Agency, Historic England and Natural England). No substantive issues arose from that consultation and as a result, the Scoping Report was considered a good basis from which to carry out a Sustainability Appraisal. The Scoping Report should be referenced alongside each stage of Sustainability Appraisal. Individual sections of the Sustainability Appraisal will highlight where changes may have occurred to method or approach since the Scoping Report, but otherwise the Scoping Report amounts to the basis for each stage of Sustainability Appraisal that follows. This document is available to view by request.

Sustainability Appraisal 1 (Strategic Growth Options) (2020):

Sustainability Appraisal 1 (Strategic Growth Options) (SA1) tested eight potential approaches to growth, amounting to eight different 'growth options' as follows:

a. Growth within Long Eaton Urban Area (the conurbation)
b. Growth within Ilkeston Urban Area (the town)
c. Growth within the Rural Area (the villages)
d. New Settlements not in the Green Belt
e. Extension of the conurbations (including Derby City) into the Green Belt
f. Extension of the town into the Green Belt
g. Extension of the villages into the Green Belt
h. New Settlements in the Green Belt

At this stage, the options above were appraised at a macro level and did not focus on individual sites which may have been known to the Council which fell within the options; the appraisal therefore avoided focus on detailed characteristics of individual sites and was primarily concerned with identifying a sustainable 'order' of broad approaches to growth. Some minor modifications were made to the wording of the Sustainability Appraisal Objectives and Policy Criteria Questions established by the Scoping Report, but these were considered inconsequential, yet worthwhile to improve the clarity of questions. These are detailed within SA1. SA1 provided the basis for the Regulation 18 version of the new Local Plan that was consulted on in January 2020. It led to the Council being able to present an initial set of 'preferred sites' within the Regulation 18 version of the new Local Plan that were known to be available for development and which fell within the more sustainable growth options as determined by SA1. It later also provided support to Sustainability Appraisal 3 (Housing Allocations Options), summarised below, and the drafting of the Regulation 19 version of the new Local Plan. SA1 is available to view by request.

Sustainability Appraisal 2 (Policy Options) (2021):

Sustainability Appraisal 2 (Policy Options) (SA2) has been produced following completion of Regulation 18 consultation and prior to commencement of Regulation 19 (Publication) consultation. It considers a range of policy options across four topic areas; Employment, Green and Blue Infrastructure, Town Centres and Transport. SA2 has provided the basis for the drafting of non-housing related policies for the Regulation 19 version of the new Local Plan.

Sustainability Appraisal 3 (Housing Allocations Options) (2021):

Sustainability Appraisal 3 (Housing Allocations Options) (SA3) appraised 25 potential housing allocations – sites which had been made known to us by interested parties either prior to commencement of the Erewash Core Strategy Review or over the course of the two public consultations comprising Regulation 18 which were undertaken during 2020 and 2021. All potential housing allocations known to the Council were appraised, with sites spanning the entire range of spatial strategic growth options appraised by SA1.

Habitats Regulations Assessment:

The Habitats Regulation Assessment (HRA) is a process that determines whether a not a development project (in this instance, a Local Plan) will impact on a recognised protected European site. As a result of Brexit, elements of HRA have now altered with jurisdiction moving from the European Commission to relevant authorities in England. Insofar as a Local Plan is concerned, the first stage of HRA involves a screening of policies prepared as part of an emerging Plan. Work undertaken by the Council has provisionally confirmed that development proposals within its emerging Plan do not adversely affect the network of European sites. This is largely because of the relatively long distances between European sites from proposed strategic housing and employment site allocations inside Erewash, confirming the lack of any meaningful impact pathways. With this conclusion, no requirement exists to move to the next stage of HRA that would involve appropriate assessment (AA) of any demonstrable linkages between development proposals and European sites.

Equalities Impact Assessment:

Public authorities are specifically required to undertake an Equalities Impact Assessment (EqIA) under the Equality Act 2010. This requirement for EqIA originates from the duty placed on public authorities to eliminate any unlawful discrimination in carrying out its functions, and promote equality of opportunity. The EqIA produced in conjunction with the emerging replacement Local Plan therefore assesses the potential impact of its policies on different groups of people within Erewash Borough. An assessment of draft policies has been undertaken in relation to the nine protected characteristics that provide an individual from discrimination. The EqIA confirms that none of the draft policies currently part of the emerging Local Plan are likely to result in any adverse impact to protected characteristics. The EqIA is available as a separate document.

Total, Cumulative and Synergistic Effects assessment:

Most environmental issues arise from the accumulation of numerous small, and sometimes indirect and inconsequential effects, rather than a few large, notable ones. Such effects are difficult to deal with on a project-by-project basis through individual Environmental Impact Assessments (EIA), so it is at a SA/SEA level that effects are best identified and addressed. The SEA Directive requires assessment of effects including secondary, cumulative and synergistic effects. Indirect secondary effects are those that do not directly occur as a result of a Local Plan, but take place away from the original effect. Cumulative effects arise where several developments a Plan makes provision for each display insignificant effects, but taken together have a significant effect. Synergistic effects come together to produce a total effect in excess than the sum of the individual effects.

This Sustainability Appraisal has undertaken an assessment of the total, cumulative and synergistic effects arising from the policies contained within the draft Local Plan. Details of the assessment can be found later in this document at Section 4.

Mitigation Analysis:

Mitigation Analysis (Appendix D1) follows on from completion of the three stages of options appraisal (SA1 – SA3) and:

- Confirms the options taken forward to form policies within the Draft Publication Local Plan (the preferred options);
- Highlights where for each preferred option there were adverse effects identified by the SA, mitigation is required and make suggestions for mitigation;
- Identifies where the perceived benefits of each preferred option can be maximised; and
- Proposes measures to monitor any significant effects of implementing the options (the Draft Local Plan).

1.4 Purpose and structure of this document:

This overarching document brings together all elements of Sustainability Appraisal carried out to support the Erewash Core Strategy Review, as summarised in Section 1.3. Where appropriate, different elements are contained within Appendices and referred to as required in order to help ease of understanding. Section 2 repeats and clarifies the Sustainability Framework against which the various elements have been considered, although a more detailed outline as well as a wide range of additional information is contained within the Scoping Report (2019). Section 3 deals with the appraisal process carried out within SAs 1-3. Where appropriate, the actual appraisals are contained within appendices, as referenced in Section 3, but context and a summary of outcomes is provided directly within Section 3. Whilst it is important for readers to consider the appendices, the key purpose of this overarching document is to provide a compact and accessible avenue for readers to engage with the overall Sustainability Appraisal process. It is hoped that this approach helps readers to understand how the Sustainability Appraisal process has influenced the content of the new Local Plan in an iterative manner.

2 SUSTAINABILITY FRAMEWORK

2.1 Role of the Sustainability Appraisal Framework:

The Sustainability Appraisal Framework contains a list of objectives that are the culmination of work carried out for the Scoping Report (2019), based on a review of other relevant plans, policies and programmes, the analysis of the baseline data and the identification of key sustainability issues. The Sustainability Appraisal Framework has provided the basis against which the various elements of Sustainability Appraisal as summarised in Section 1.3 were carried out.

2.2 Sustainability Appraisal Objectives:

A table of Sustainability Appraisal Objectives, including any minor alterations to its content taken forward by the Council since the Scoping Report (highlighted in bold) is below.

Table 1 Sustainability Appraisal Objectives

Sustainability Appraisal objectives	**Sustainability Appraisal objective description**	**Strategic Environmental Assessment Directive topics**
1. Housing	To ensure that the housing stock meets the housing needs of the population, including gypsies, travellers and travelling show-people.	• Population • Material assets
2. Employment and Jobs	To create employment opportunities.	• Population • Material assets
3.Economic Structure and Innovation	To provide the physical conditions for a high quality modern economic structure including infrastructure to support the use of new technologies.	• Population • Material assets
4. Shopping Centres	Increase the vitality and viability of existing shopping centres.	• Population • Human health
5. Health and Wellbeing	To improve health and wellbeing and reduce health inequalities.	• Population • Human health
6. Community Safety	To improve community safety, reduce crime and the fear of crime.	• Population • Human health
7. Social Inclusion	To promote and support the development and growth of social capital and to improve social inclusion and to close the gap between the most deprived areas within the plan area.	• Population • Human health

8. Transport	To make efficient use of the existing transport infrastructure, help reduce the need to travel by car, improve accessibility to jobs and services for all and to improve travel choice and accessibility.	• Air • Climatic factors
9. Brownfield Land	To make efficient use of brownfield land and recognise biodiversity value where appropriate.	• Soil • Material assets
10. Energy and Climate Change	To minimise energy usage and to develop low carbon energy resource, reducing dependency on non-renewable sources.	• Climatic factors
11. Pollution and Air Quality	To manage air quality and minimise the risk posed by air, noise and other types of pollution.	• Air • Climatic factors • Human health
12. Flooding and Water Quality	To minimise the risk of flooding and to conserve and improve water quality.	• Water • Climatic factors
13. Natural Environment, Biodiversity, Green and Blue Infrastructure	To increase biodiversity levels and protect and enhance Green and Blue Infrastructure and the natural environment.	• Biodiversity • Fauna • Flora
14. Landscape and Built Environment	To protect and enhance the landscape and townscape character, including heritage and its setting and enhancing the place through good design.	landscape
15. Heritage	To conserve the area's heritage and provide better opportunities for people to enjoy culture and heritage.	• Cultural heritage
16. Natural Resources and Waste Management	To prudently manage the natural resources of the area including soils, safeguarding minerals and waste.	• Soil • Material assets

2.3 Sustainability Appraisal Criteria Questions:

The objectives identified in Table 1 form the basis for appraisal of options across the various stages undertaken. Specifically, two key mechanics which are central to the appraisal process have been informed by Table 1; Criteria Questions and Scoring.

Criteria questions

The original Scoping Report (2019) proposed different sets of questions for appraising ‘policy’ based options and ‘allocation’ based options. SA1 utilised the original ‘policy criteria questions’ to undertake appraisals as set out in the Scoping Report (2019) notwithstanding some minor amendments to the wording for purposes of clarity.

Upon considering the next stages of Sustainability Appraisal following completion of SA1, it was clear that a continuation of use of the original policy-based criteria questions would allow for a more detailed and consistent analysis of allocation options (for SA3) to occur as well as provide an appropriate foundation for assessing policy options in SA2. In general, it was considered that the originally proposed allocations-based criteria questions were not particularly informative, lacked depth and failed to engage adequately with the Sustainability Objectives when compared with the policy-based criteria questions used for SA1, particularly when considering the need to assess differences between options which in general terms shared many similarities (specifically, the potential allocations). It was however identified that two criteria questions within the allocations-based criteria questions set out in the original Scoping Report (2019) were of value and should be incorporated into the criteria questions for SAs 1 and 2. In effect, a ‘hybridised’ set of general criteria questions were developed for application to both SA2 and 3 (Policy and Allocation options respectively). The hybridised criteria questions, with the two additional criteria questions in bold, are in Table 2 below.

Table 2 Hybridised Criteria Questions

Sustainability Appraisal Objectives	**Policy Criteria Questions**
1. Housing (to ensure that the housing stock meets the housing needs of the population, including gypsies, travellers and travelling showpeople)	2. Will it increase the range and affordability of housing for all social groups?
1. Housing	2. Will it provide sufficient pitches and plots for gypsies and travellers and travelling showpeople?
1. Housing	3. Will it reduce homelessness?
1. Housing	4. Will it reduce the number of unfit/vacant homes?
1. Housing	5. Will it provide the required infrastructure?
2. Employment and Jobs (to create employment opportunities)	1. Will it improve the diversity and quality of jobs?
2. Employment and Jobs	3. Will it reduce unemployment?
2. Employment and Jobs	4. Will it improve rural productivity in terms of employment opportunities?

3. Economic Structure and Innovation (To provide the physical conditions for a high quality modern economic structure including infrastructure to support the use of new technologies).	1. Will it provide land and buildings of a type required by businesses?
3. Economic Structure and Innovation	2. Will it provide business/university clusters?
3. Economic Structure and Innovation	3. Will it create jobs in high knowledge sectors?
3. Economic Structure and Innovation	4. Will it encourage graduates to live and work within the plan area?
3. Economic Structure and Innovation	5. Will it provide the required infrastructure
4. Shopping Centres (increase the vitality and viability of existing shopping centres)	1. Will it encourage the vitality of the city centre, town centre, district centre or local centre?
5. Health and Wellbeing (To improve health and wellbeing and reduce health inequalities)	1. Will it reduce health inequalities?
5. Health and Wellbeing	2. Will it improve access to health services?
5. Health and Wellbeing	3. Will it increase the opportunities for recreational physical activity?
5. Health and Wellbeing	4. Will it provide new open space or improve the quality of existing open space?
5. Health and Wellbeing	5. Will it improve access to local food growing opportunities?
6. Community Safety (To improve community safety, reduce crime and the fear of crime)	1. Will it reduce crime and the fear of crime?
6. Community Safety	2. Will it contribute to a safe and secure built environment?
7. Social Inclusion (To promote and support the development and growth of social capital and to improve social inclusion and to close the gap between the most deprived areas within the plan area)	1. Will it protect and enhance existing cultural assets?
7. Social Inclusion	2. Will it improve access to, encourage engagement with and residents' satisfaction in community activities?
7. Social Inclusion	3. Will it increase the number of facilities e.g. shops, community centres?

7. Social Inclusion	4. Will it provide for the educational needs of the population?
8. Transport (To make efficient use of the existing transport infrastructure, help reduce the need to travel by car, improve accessibility to jobs and services for all and improve travel choice and accessibility)	1. Will it use and enhance existing transport infrastructure?
8. Transport	2. Will it help to develop a transport network that minimises the impact on the environment?
8. Transport	3. Will it reduce journeys undertaken by private car by encouraging alternative modes of transport?
8. Transport	4. Will it increase accessibility to services and facilities?
9. Brownfield Land (To make efficient use of brownfield land and recognise biodiversity value where appropriate)	1. Will it make efficient use of brownfield land?
9. Brownfield Land	2. Will it minimise impact on the biodiversity interests of land?
10. Energy and Climate Change (To minimise energy usage and to develop low carbon energy resource, reducing dependency on non-renewable sources)	1. Will it result in additional energy use?
10. Energy and Climate Change	2. Will it improve energy efficiency of the building stock within the plan area?
10. Energy and Climate Change	3. Will it support the generation and use of renewable energy?
10. Energy and Climate Change	4. Will it support the development of community energy systems?
10. Energy and Climate Change	5. Will it ensure that buildings are able to deal with future changes in climate change?
11. Pollution and Air Quality	1. Will it increase levels of air, noise and other types of pollution?
12. Flooding and Water Quality (To minimise the risk of flooding and to conserve and improve water quality)	1. Will it minimise or mitigate flood risk?
12. Flooding and Water Quality	2. Will it improve water quality?
12. Flooding and Water Quality	3. Will it conserve water?

12. Flooding and Water Quality	4. Will it improve or help to promote water efficiency?
12. Flooding and Water Quality	5. Will it cause a deterioration of Water Framework Directive status or potential of onsite watercourses?
12. Flooding and Water Quality	6. Will it cause any harm to a Source Protection Zone or the water environment?
13. Natural Environment, Biodiversity, Green and Blue Infrastructure (To increase biodiversity levels and protect and enhance Green and Blue Infrastructure and the natural environment)	1. Will it help protect and improve biodiversity and avoid harm to protected species?
13. Natural Environment, Biodiversity, Green and Blue Infrastructure	2. Will it allow for biodiversity net gains?
13. Natural Environment, Biodiversity, Green and Blue Infrastructure	3. Will it conserve and enhance the geological environment?
13. Natural Environment, Biodiversity, Green and Blue Infrastructure	4. Will it maintain and enhance woodland cover and management?
13. Natural Environment, Biodiversity, Green and Blue Infrastructure	5. Will it provide new open space or green space?
13. Natural Environment, Biodiversity, Green and Blue Infrastructure	6. Will it improve the quality of existing open space?
13. Natural Environment, Biodiversity, Green and Blue Infrastructure	7. Will it encourage and protect or improve Green and/or Blue Infrastructure Networks?
14. Landscape and Built Environment (To protect and enhance the landscape and townscape character, including heritage and its setting and enhancing the place through good design)	1. Does it respect or preserve identified landscape character?
14. Landscape and Built Environment	2. Does it have a positive impact on visual amenity?
14. Landscape and Built Environment	3. Will it maintain and/or enhance the local distinctiveness of the townscape or settlement character?
14. Landscape and Built Environment	4. Will it conserve or enhance the interrelationship between the landscape and the built environment?
15. Heritage (To conserve the area's heritage and provide better opportunities for people to enjoy culture and heritage)	1. Will it conserve and enhance the historic environment, designated and non-designated heritage assets and their settings?

15. Heritage	2. Will it respect, maintain and strengthen the local character and distinctiveness e.g. landscape/townscape character?Will it respect, maintain and strengthen the local character and distinctiveness e.g. landscape/townscape character?
15. Heritage	3. Will it provide better opportunities for people to access and understand local heritage and to participate in cultural activities?
15. Heritage	4. Will it protect or improve access and enjoyment of the historic environment?
15. Heritage	5. Will it conserve and enhance the archaeological environment?
16. Natural Resources and Waste Management (To prudently manage the natural resources of the area including soils, safeguarding minerals and waste)	1. Will it lead to reduced consumption of raw materials?
16. Natural Resources and Waste Management	2. Will it promote the use of sustainable design, materials and construction techniques?
16. Natural Resources and Waste Management	3. Will it result in additional waste?
16. Natural Resources and Waste Management	4. Will it reduce hazardous waste?
16. Natural Resources and Waste Management	5. Will it protect the best and most versatile (BMV) agricultural land?
16. Natural Resources and Waste Management	6. Will it prevent the loss of greenfield land to development?
16. Natural Resources and Waste Management	7. Will it sterilise mineral resources?

2.4 Objective Scoring:

It is scores applied to overall objectives against each option of a sustainability appraisal that highlights where there may be sustainability deficiencies that require mitigation. In order to assign a score for each objective, individual criteria questions as outlined in Table 3 above are appraised and equivalent scoring parameters applied.

Table 3 Score Coding for Individual Criteria Questions

Major positive (+2)	**Minor positive (+1)**	**Neutral (0)**	**Minor negative (-1)**	**Major negative (-2)**

Each of the criteria questions receive an award in accordance with the scoring system in Table 3 above and this is based on a consideration of the question and discussion within the assessment table, with a score applied accordingly. Each award against the criteria questions includes a descriptor (‘major positive’ for example) as well as numeric value between -2 and +2 (+2 in the case of major positive in this example).

The criteria questions under each objective and scores applied to them are used to inform what the objective score should be. This is done numerically by adding each of the criteria questions’ numeric values together, resulting in an overall score. The descriptor against each objective will be applied when the numeric value shown in Table 3 above is met or exceeded in the case of ‘major’ scores.

The benefit of the numeric approach to scoring and reason for the shift from the previous approach utilised for SA1 is it provides the opportunity for more nuanced comparison between options. For example, an objective against one option that is awarded major positive and a numeric value of +2 is not the same as the same objective against another option receiving the same major positive descriptor, but with a score of +6, with the former method effectively acting as a ‘cap’ and thus preventing an understanding of a substantially negative or positive effect. The benefit of this approach is more strongly felt when assessing potential allocations which on many levels share similarities. Ultimately, it allows for options across both SAs 2 and 3 to be better compared through a range of matrix tables that are contained in Section 3. Additionally, the move to use of numeric values in representing the sustainability of an option is aligned well with modern accessibility requirements. Notably, it does weaken the role of the descriptors that have carried through from the Scoping Report (2019); instead, the resulting numeric values applied against each objective provide the required insight.

Each option presented within SAs 2 and 3 receives a total score that is the sum of all of the individual objective scores for that option. It is this overall number that can provide for general comparison between options, whilst the individual objective scores can be used to identify areas where mitigation might be required to improve an option’s sustainability if it were to be selected as the approach to be incorporated into the new Local Plan’s policies. In this way, this Sustainability Appraisal process is truly iterative and has genuinely informed the evolvement and creation of land-use policies. One important caveat worth noting is that the total score against an option only really has meaning when compared with its counterparts. For example, a result of -5 awarded to an option may not indicate a negative outcome if the alternative options are awarded -10 or more.

In addition to the above, the terms ‘uncertain’ and ‘no impact’ have been replaced with ‘neutral’. All appraised option outcomes are uncertain to some extent until such time that outcomes can be clearly observed and it is considered unrealistic that options would ever result in ‘no impact’ at all. The use of neutral also works well with the new scoring method where for example a +1 and -1 cancel each another out to result in an award of 0 (neutral).

3 ASSESSMENTS

3.1 Introduction:

Assessments are carried out and organised in table format within which a commentary is provided in consideration of each criteria question that fall under each of the Sustainability Appraisal objectives. An additional column then provides the score for each of the Sustainability Appraisal objectives, as informed by the criteria question scores.

The assessment tables for SA1 are contained within the original document that is available separately. As explained earlier in this document, SA1 employed a slightly different scoring approach and this remains unaltered. SAs 1 and 2 are dealt with independently in the following sections of this document, but the assessment tables are contained within the Appendices as indicated.

Conclusion matrices are included within each of the following sections to provide a useful oversight of the outcomes from the appraisal process, along with brief commentary around key headline findings. Total, cumulative and synergistic effects are considered for SAs 2 and 3 at Section 4.

3.2 Sustainability Appraisal 1 (Strategic Growth Options):

SA1 tested eight potential approaches to growth, amounting to eight different ‘growth options’ as follows:

A. Growth within Long Eaton Urban Area (the conurbation)
B. Growth within Ilkeston Urban Area (the town)
C. Growth within the Rural Area (the villages)
D. New Settlements not in the Green Belt
E. Extension of the conurbations (including Derby City) into the Green Belt
F. Extension of the town into the Green Belt
G. Extension of the villages into the Green Belt
H. New Settlements in the Green Belt

At this stage, the options above were appraised at a ‘macro’ level and did not focus on individual sites that may have been known to the Council that fell into each of the spatial options. The appraisal therefore avoided any focus on the detailed characteristics of individual sites and was primarily concerned with identifying a sustainable ‘order’ of broad approaches to growth. SA1 is available as a separate document.

3.3 Sustainability Appraisal 2 (Policy Options):

SA2 tested a range of policy options across four topic areas; Employment, Green and Blue Infrastructure, Town, Local and Village centres and Transport. It has provided the basis for the drafting of non-housing related policies for the Publication version (Regulation 19) of the new Local Plan. Assessment tables for each option are contained within Appendices A1-A4. A description of the range of policy options that were appraised is contained in Table 4 below.

Table 4 Range of Options Tested within Sustainability Appraisal 2 (Policy Options)

Policy theme	**Policy option description**	**Policy option reference under theme**
Employment	Allocation of existing strategic employment zones	Option 1
Employment	Allocation of strategic employment zones in Erewash, plus the allocation of new employment land at Stanton Regeneration Site (SRS)	Option 2
Employment	Allocation of strategic employment zones in Erewash, plus the allocation of employment space at West Hallam Storage Depot (WHSD	Option 3
Employment	Allocation of strategic employment zones in Erewash, plus the allocation of new employment land East of Breaston (EoB)	Option 4
Green and Blue Infrastructure	Do nothing ('business as usual')	Option 1
Green and Blue Infrastructure	Allocate Strategic Green Infrastructure Zones (SGI Zones)	Option 2
Town, Local and Village centres	Existing retail hierarchy (town centres at Ilkeston and Long Eaton and local centres at Borrowash and Sandiacre)	Option 1
Town, Local and Village centres	Existing retail hierarchy plus new local centre at Kirk Hallam within SGA25 (potential allocation south west of Kirk Hallam)	Option 2

Town, Local and Village centres	Existing retail hierarchy plus new local centre at Kirk Hallam within SGA25 (potential allocation south-west of Kirk Hallam) and designation of village centres at existing areas of higher retail concentration in Breaston, Draycott and West Hallam.	Option 3
Town, Local and Village centres	Existing retail hierarchy plus new local centre at Kirk Hallam within SGA25 (potential allocation south west of Kirk Hallam) and designation of village centres at existing areas of higher retail concentration in Breaston, Draycott, West Hallam and Little Eaton. New village centre at Stanton South.	Option 4
Transport	Implement the Kirk Hallam relief road.	Option 1
Transport	Safeguard the High Speed 2 route.	Option 2
Transport	Safeguard and enhance Trent Valley Way and Great Northern Greenway (including Bennerley Viaduct).	Option 3

Policy Options – Employment:

Table 5 Conclusion Matrix – Policy Options (Employment)

Sustainability Objective	**Option 1**	**Option 2**	**Option 3**	**Option 4**
Housing	0	+2	0	0
Employment & Jobs	-1	+3	+2	+2
Economic Structure & Innovation	-2	+5	-1	0
Shopping Centres	+1	+1	0	0
Health & Wellbeing	0	0	+1	0
Community Safety	+1	+2	0	-2
Social Inclusion	0	+2	+1	+1
Transport	0	0	-1	-1
Brownfield Land	2	+3	+1	-2
Energy & Climate Change	-2	+3	+2	+1

Pollution & Air Quality	0	-1	0	-1
Flooding & Water Quality	1	-2	-1	-3
Natural Environment, Biodiversity & Green and Blue Infrastructure	0	+5	+5	-1
Landscape & Built Environment	+1	+2	0	-6
Heritage	0	+1	+2	-1
Natural Resources & Waste Management	+1	-1	0	-5

Summary of employment policy option

Option 2 (Allocation of strategic employment zones in Erewash, plus the allocation of new employment land at Stanton Regeneration Site (SRS)) scores most highly when compared with the three alternative options considered. Option 4 (Allocation of strategic employment zones in Erewash, plus the allocation of new employment land East of Breaston (EoB)) performs the most weakly, and represents a stark contrast to the assessment outcome against Option 2. The conclusion matrix shows Option 4 performs poorly in sustainability terms, particularly around the likely impacts on matters concerning the natural landscape and use of natural resources when compared with Option 2. Option 2 also capitalises on the SRS's largely brownfield status, as a consequence of its long industrial heritage that has previously seen the site accommodate a large number of businesses before becoming increasingly vacant across a number of decades.

Policy Options – Green and Blue Infrastructure:

Table 6 Conclusion Matrix – Policy Options (Green and Blue Infrastructure)

Sustainability Objective	Option 1	Option 2
Housing	0	+3
Employment & Jobs	0	+1
Economic Structure & Innovation	0	0
Shopping Centres	0	+1
Health & Wellbeing	0	+3
Community Safety	0	+1
Social Inclusion	0	+1
Transport	-3	+6

Brownfield Land	0	0
Energy & Climate Change	0	0
Pollution & Air Quality	0	0
Flooding & Water Quality	0	+1
Natural Environment, Biodiversity & GBI	-3	+9
Landscape & Built Environment	0	0
Heritage	0	0
Natural Resources & Waste Management	-1	+1
TOTALS	**-7**	**+27**

Summary of green and blue infrastructure policy option

Option 2 (Allocate Strategic Green Infrastructure (SGI) Zones) clearly provides a wide range of sustainability benefits when compared with the option of not identifying SGI zones (a 'business as usual' approach). In particular, Option 2 provides significant benefits in sustainability around the topics of transport (in particular by helping to provide the environment necessary to accommodate sustainable forms of non-motorised transportation around the Borough) and natural environment, biodiversity and green and blue infrastructure. Benefits in the latter topic area also include the knock-on protection of the natural environment and its biodiversity and ecological value and the increased focus on long-term protection of existing green and blue infrastructure that would be expected to result from pursuing the option. Complimenting these benefits is a distinct lack of significant negative effects on any of the sustainability objectives, resulting in an overall very positive outcome against implementation of Option 2 in sustainability terms.

Policy Options – Town, Local and Village Centres

Table 7 Conclusion Matrix – Policy Options (Town, Local and Village Centres)

Sustainability Objective	Option 1	Option 2	Option 3	Option 4
Housing	+3	+3	+3	+3
Employment & Jobs	+1	+3	+3	+4
Economic Structure & Innovation	0	+1	+2	+3
Shopping Centres	+1	+2	+2	+2
Health & Wellbeing	0	+2	+3	+3
Community Safety	+1	+2	+2	+2

Social Inclusion	+1	+1	+2	+2
Transport	+1	+3	+3	+5
Brownfield Land	+1	0	+2	+3
Energy & Climate Change	0	-1	-1	-1
Pollution & Air Quality	0	0	0	0
Flooding & Water Quality	0	0	0	0
Natural Environment, Biodiversity & GBI	+1	-4	-4	-5
Landscape & Built Environment	+1	-2	-1	-1
Heritage	+2	+2	+4	+3
Natural Resources & Waste Management	+1	-4	-4	-5
Total	**+14**	**+8**	**+16**	**+18**

Summary of Town, Local and Village centres policy option

The options presented within the Town, Local and Village centres policy approach increase in their levels of scope and intervention from Option 1 (a 'business as usual' approach, such as the retention of the existing Town and Local centre designations) through to Option 4 (retention of existing retail hierarchy plus new Local centre at Kirk Hallam within SGA25 (south west of Kirk Hallam) and designation of Village centres at existing settlements with higher retail concentration in Breaston, Draycott, West Hallam and Little Eaton with a new village centre at Stanton South). The increase in assessed levels of sustainability correlate closely with the potential increases in policy intervention; that is, the widening of the scope of the retail hierarchy and designation of additional tiers of retail centres appears to result in increased positive sustainability outputs. The margins in the total scores from the four options are narrow, but it is clear that Option 4 as described above has been assessed as the most sustainable option for policy to pursue. Notwithstanding this, it appears that the sustainability objective relating to natural environment, biodiversity and green and blue infrastructure is most negatively impacted upon progressively between Options 1 and 4, although this is mitigated elsewhere – particularly around employment-based topics - to such an extent that the overall order of sustainability is not effected.

Policy Options – Transport

Table 8 Conclusion Matrix – Policy Options (Transport)

Sustainability Objective	Option 1	Option 2	Option 3
Housing	+4	-1	+5
Employment & Jobs	+2	+2	+3
Economic Structure & Innovation	1	-5	+1
Shopping Centres	1	1	+1
Health & Wellbeing	-1	-3	+4
Community Safety	-2	-2	+2
Social Inclusion	+5	+1	+2
Transport	0	-2	+7
Brownfield Land	-3	+3	0
Energy & Climate Change	+1	-1	+1
Pollution & Air Quality	-1	-1	+1
Flooding & Water Quality	-3	-2	-1
Natural Environment, Biodiversity & Green and Blue Infrastructure	-4	-9	+1
Landscape & Built Environment	-5	-3	+7
Heritage	0	-5	+5
Natural Resources & Waste Management	-7	-4	0
TOTALS	**-12**	**-31**	**+39**

Summary of Transport policy option

Option 3 (Safeguard and enhance Trent Valley Way and Great Northern Greenway (including Bennerley Viaduct) stands out as being significantly more sustainable when compared with the other two options. This is unsurprising, given the relatively limited proposal involving the safeguarding and enhance what are already existing assets – albeit requiring completion and enhancement – when compared with Options 1 and 2 that would represent significant

development and intensive/invasive programmes of construction presenting associated sustainability challenges. Such challenges appear to be centred heavily on topics of natural environment, landscape and natural resources, indicating a clear direction required in terms of mitigation strategy should either option form part of the new Local Plan.

Option 2, relating to the safeguarding of the proposed HS2 route, faces the most challenges in sustainability terms. In particular, this option has a range of negative effects on sustainability objective topics relating to the natural environment, landscape and biodiversity, with the act of safeguarding of land for long-term redevelopment resulting in localised effects, particularly on economic structure and housing-related issues (related to the associated sterilisation of land for other economic uses and the loss of existing housing stock that would result in the medium term).

3.4 Sustainability Appraisal 3 (Housing Allocations Options):

SA3 appraised 25 potential housing allocations – sites that had been made known to the Council by promotors either prior to commencement of the Erewash Core Strategy Review or over the course of the two public consultations (Regulation 18) which were undertaken during 2020 and 2021. Background evidence prepared in support of the Local Plan's production refer to these sites as Strategic Growth Areas (SGAs). All potential housing allocations known to the Council were appraised, and spanned the entire spectrum of strategic growth options appraised within SA1.

All information available to the Council on each site was considered as part of the appraisal process; including any submission information provided by site promoters. This meant the level of detail available to inform the appraisals varied from site-to-site. Where detailed site promoter information was not available, the Council alternatively relied upon on its own extensive evidence base whilst also seeking guidance from external sources of information to help inform and aid the robustness of the appraisal process.
The assessment tables for SA3 are contained within Appendices B1-B6.

Table 9 Conclusion Matrix (ranked) – Sustainability Appraisal 3 (Housing Allocations Options)

Potential Housing Allocation sites	O1	O2	O3	O4	O5	O6	O7	O8	O9	O10	O11	O12	O13	O14	O15	O16	TOTAL SCORE
SGA21 - Stanton	+4	+2	0	+1	+5	+2	+7	+5	+3	+2	0	0	+4	+3	+3	3	+38
SGA15 - West Hallam Storage Depot	+4	-1	-3	+1	+3	+2	+4	0	+1	+2	0	-2	+6	+1	+2	-3	+17
SGA25 - SW of Kirk Hallam	+4	+4	+4	+1	+5	-2	+7	+6	-3	+1	-1	-4	-1	-2	+2	-5	+16
SGA7 - North of Cotmanhay	+2	0	0	+1	+5	-1	+2	+3	-3	+1	-1	-2	-1	-2	+1	-5	0

SGA1 - Acorn Way	+3	+2	0	+2	+3	-2	+3	+3	-3	0	-1	-4	0	-3	0	-5	-2
SGA16 - North of West Hallam	+4	+4	0	+1	+1	-2	+4	-1	-3	0	-1	-2	-2	-5	+2	-6	-6
SGA20 - North of Draycott and Breaston	+4	+5	+3	+1	+2	-2	8	-3	-4	+1	-1	-5	+1	-7	-1	-8	-6
SGA26 - North of Spondon	+2	-1	0	+1	+3	-2	+2	+2	-3	+1	-1	-2	-2	-4	+1	-6	-9
SGA3 - Breadsall Hilltop	+2	-1	0	0	+1	0	+2	0	-2	0	-1	-3	-3	-2	+2	-4	-10
SGA10 - South of Little Eaton	+2	0	0	0	+4	0	0	-1	-3	+1	-1	-7	-1	0	+1	-5	-10
SGA23 - North West of Kirk Hallam	+3	+1	0	+1	+2	-2	+2	+1	-3	0	-1	-3	-3	-4	+1	-5	-10
SGA6 - West of Borrowash	+3	+1	0	+1	0	-2	+2	+1	-2	0	-1	-1	-3	-4	+1	-6	-10
SGA13 - South of Sawley	+3	+2	0	+2	+4	-2	+3	+2	-3	0	-1	-6	+1	-7	-4	-5	-11
SGA5 - East of Borrowash	+1	0	0	+1	+3	-1	+1	-2	-2	+1	-1	-2	-3	-4	+1	-5	-12
SGA17 - North of Lock Lane	+2	0	0	+1	+1	-2	+2	+2	-4	+1	-1	-4	-6	-1	+2	-5	-12
SGA2 - Land at Beech Lane West Hallam	+2	-1	0	+1	+3	-2	+2	-2	-3	+1	-1	-1	-1	-5	-1	-5	-13
SGA27 - Hopwell Hall	+4	+4	+3	-1	+6	-4	+8	-5	-4	+2	-2	-7	0	-7	-5	-6	-14
SGA19 - Maywood Golf Course	+3	+1	0	+1	+1	-2	+2	-5	-3	0	-1	-2	-2	-7	+1	-6	-19
SGA24 - Croft Lane Breadsall	+1	-1	0	0	0	0	+2	-2	-3	0	-1	-3	-3	-5	0	-5	-20
SGA28 - Rushy Lane, Risley	+3	+1	0	+1	-1	-2	+3	-4	-3	0	-2	-1	-1	-7	-2	-6	-21
SGA31 - South of Longmoor Lane, Breaston	+2	-1	0	+1	-1	-2	+1	-4	-1	+1	-2	-1	-1	-5	-1	-7	-21
SGA11 - Risley village extension	+1	-1	0	0	-2	-2	+1	-4	-4	+1	-1	-2	-2	-3	+1	-5	-22
SGA29 South of Derby Road, Risley	+2	-1	0	+1	0	-2	+3	-3	-3	+1	-1	-6	+2	-8	-1	-6	-22
SGA30 - South of Derby Road, Draycott	+1	-1	0	0	-1	-2	+2	-3	-3	+1	-1	-5	-1	-4	-1	-6	-24

SGA22 - Botany Bay, Ilkeston	+1	0	0	0	0	-3	0	+3	-4	+1	-1	-8	-4	-5	-1	-5	-26

Summary of Housing Allocations Options

In relative terms, potential housing allocations that attract an overall score of -10 and upwards can be said to fall comfortably within the most sustainable half of site options appraised by the Council.

In general, many of the fundamental characteristics of sustainability identified within SA1 (which assessed the suitability of a potential spatial hierarchy) are played out on a site-specific basis; this can most notably be seen with the very strong performance of the two strategically sized brownfield sites within the Borough – Stanton (SGA21) and West Hallam Storage Depot (SGA15). Indeed, SA1 identified the locating of housing development on new settlements not in the Green Belt – which these two sites would theoretically be capable of accommodating – as the most sustainable approach to the locating of housing growth. This demonstrates that the type of land upon which housing allocations might be located has a notable effect on levels of sustainability.

The levels of sustainability of the two strategic brownfield sites when compared with the next ranked site also highlights the sustainability challenges which persist in building on greenfield land. However, sites that would result in extensions of the town and conurbations also feature highly in the matrix at Table 9 even though this would result in the development of greenfield land. This in itself indicates that the location of potential housing allocations also has a strong bearing on levels of sustainability in general, primarily based around their proximity – or otherwise – to existing services, facilities and sources of employment. The potential allocation south-west of Kirk Hallam (SGA25) performs particularly well despite its greenfield status primarily because of its location adjacent to the town (in this instance, Ilkeston). When compared with other greenfield sites SGA25 performs particularly well, largely because of the associated delivery of a proposed relief road that would be a unique requirement of infrastructure of any allocation at this location.

The issue of scale also appears to play a consistent role in determining the levels of sustainability displayed by a site option through the appraisal process. A larger site resulting in a significant expansion of population in the locality results in generally positive effects on objectives relating to housing, the economy and retail. Additionally, larger sites are more likely to accommodate services, facilities and more expansive areas of green and open space provision internally, resulting in positive effects on a wide range of sustainability objectives through delivering such enhancements. However, this pattern is not unceasing; in the case of the Hopwell Hall site (SGA27), its vastness ensures the resulting negative effects on the environmental related sustainability objectives generally counterbalance positive effects the site achieves in those sustainability objectives considered above.

Overall, assessment of the 25 SGA sites, each of which has been viewed as a potential option to help the Council address its Plan-wide housing requirements, has followed a comprehensive approach in evaluating whether the sites achieve general sustainability against the 16 sustainability objectives. The wide variance between the assessed most and least sustainable sites (spanning scores between +38 and -26) demonstrates a stark disparity in site characteristics and

conditions across the portfolio of SGAs. As explained by 2.4, the scoring method employed by SA2 and SA3 has contributed to the wide variation of scores awarded to individual sites. This has helped the Council gain a more detailed understanding of the relative strengths and weaknesses of all 25 sites, providing valuable insight into their respective attributes as shown by Table 9.

4. TOTAL, CUMULATIVE AND SYNERGISTIC EFFECTS

As discussed at 1.3, one of the key roles a Sustainability Appraisal should undertake is to assess the effects that a councils' Local Plan should have on identified sustainability objectives. SAs 2 and 3 have extensively explored and assessed the links and associations between the 16 SA objectives and the general policies and site-specific policies.

The next stage is to consider the overall impact of the collective portfolio of policies, both topic-based and site-based, on the ability to deliver general sustainability through the implementation of policies in the emerging Local Plan. Prior to undertaking analysis on Total, Cumulative and Synergistic effects, the SA presents a table setting out the aggregated impacts of policies resulting from the scoring system as described by 2.4. The conclusion results shown in this table give a strong indication of the assessed level of sustainability, providing helpful context to the subsequent consideration of effects.

Tables 1.1 and 1.2 of Appendix C1 omit an aggregated score derived from totalling the assessments of each of the 16 SA objectives. This is deliberate as it may overshadow the more important element of work that considers the Total, Cumulative and Synergistic effects in a greater detail in Appendix C1. However, it is worth mentioning that the overall total from assessments of the various policies featured within of the emerging Plan scores well in excess of +100. This provides a useful, 'top line' conclusion that helps to confirm the wider sustainability that can be demonstrated from the comprehensive analysis.

As the contents of Table 2 in Appendix C1 unsurprisingly show, a range of cumulative impacts, synergistic effects and overall effects exist. Despite this, Table 2 is also able to offer a degree of comfort that many of the negative effects flagged through the exercise can readily be mitigated. This can be achieved through the contents of topic-based and site-specific policies in the Local Plan Publication version, together with other mechanisms such as external strategies, national planning guidance and other regulatory regimes (for example Building Regulations). Collectively, these help to demonstrate practical measures that are able to reduce, or in some instances remove altogether, any negative effects on aspects of sustainability covered by the framework of objectives.

Social media pages.

Report of the Director of Resources to Council, 03 March 2022

Proposed Erewash Core Strategy Review

1 Purpose of report

1.1 To publish the Proposed Erewash Core Strategy Review and supporting Sustainability Appraisal for consultation prior to submission to the Secretary of State for public examination.

2 Recommendations

2.1 That Council considers the proposals contained within this report and:

a. Approves the findings of the Statement of Consultation at Appendix 1 to this report.
b. Approves the Draft Sustainability Appraisal at Appendix 2 to this report for public consultation.
c. Approves the Proposed Erewash Core Strategy Review at Appendix 3 to this report for public consultation and subject to the results of the consultation, its subsequent submission to the Secretary of State for independent examination.

3 Statement of Consultation

3.1 In March 2021, Council approved consultation on the Erewash Core Strategy Review (Revised Options for Growth) for a period of 6 weeks. The Statement of Consultation at Appendix 1 to this report summarises the responses to the consultation and the proposed Council responses to them.

3.2 The vast majority (over 96%) of the 2,503 responses to the Revised Options for Growth consultation related to the four strategic housing allocations proposed in the Green Belt. These responses are considered below on a site by site basis.

3.3 South West of Kirk Hallam

This site attracted 1,227 responses, the vast majority of which were from Erewash Borough residents. Key concerns focussed on the potential threat to the Pioneer Meadows Local Nature reserve, and to general enjoyment of the open countryside of the Green Belt here. The housing allocation as detailed in the Proposed Core Strategy Review does not encroach on Pioneer Meadows and provides for an extensive wildlife corridor along the Sow Brook as an extension to the Local Nature Reserve.

3.4 There are only two public rights of way into the countryside affected by the proposal for 1,300 homes, namely 250m of Dale Abbey Footpath (2) extending westwards from a public open space on Wirksworth Road, and a similar length of Dale Abbey Footpath (49) extending south westwards from the proposed extension to Pioneer Meadows Local Nature Reserve. The housing allocation detailed in the Proposed Core Strategy specifically requires enhancements to these footpaths, including safe crossings of the proposed Kirk Hallam Relief Road. Access to the wider countryside for Kirk Hallam will therefore be maintained.

3.5 Traffic is also a major concern of respondents. The proposals in the Core Strategy require access to this site to be taken via a relief road linking Sowbrook Lane with Ladywood Road. Consequently officers consider that the proposals will not result in a significant increase in traffic in Kirk Hallam.

3.6 North of Spondon

This site attracted 708 representations, of which only a few were from Erewash Borough residents. Concerns were raised about the impact of the proposals on wildlife, especially Spondon Wood and the deer that emerge from the wood to feed in the open field. The field which is allocated for development in the Proposed Core Strategy is farmland with a low biodiversity value, and the allocation specifically requires a suitable buffer zone between the proposed housing and the wood to protect the biodiversity interest of the wood. It is likely that deer will continue to use that buffer for foraging.

3.7 Traffic and pressure on services from the 200 homes proposed are also a major cause of concern of respondents. Liaison with Derby City Council has identified concerns over pedestrian and bus access, which are specifically addressed in the proposed policy by the provision of a pavement along the A6096 to the site and additional bus halts on this existing bus route. Derby City Council has not requested any other mitigation but the policy nevertheless provides for financial contributions towards expanded school provision in Spondon, should it be needed to support the new housing.

3.8 North of Cotmanhay

This site attracted 417 representations, the majority of which were from Erewash Borough residents. The impact on wildlife in general and Cotmanhay Wood in particular were raised, along with the shortage of greenspace in Cotmanhay and the need to avoid coalescence with Heanor. The allocation in the Propo
Strategy specifically requires a suitable buffer zone between the proposed housing and the wood to protect the biodiversity interest of that site, along witl

managed access in order to bring Cotmanhay Wood into use as a community woodland. As there is currently no lawful access across the site allocated for development or into the wood, these proposals will increase access to greenspace. As the allocation is behind the ribbon development along Heanor Road, officers consider its development will not reduce the level of separation from Heanor.

3.9 Traffic and pressure on services from the 250 homes proposed were also an area of concern. The Proposed Core Strategy makes provision for vehicular access onto Heanor Road, where the traffic from an additional 250 households is not expected to make a significant impact on existing traffic levels. The housing allocation policy provides for financial contributions towards expanded school capacity. It is not possible to make similar commitments to expanded health care services, as Derby and Derbyshire Clinical Commissioning Group have yet to propose any such service improvements.

3.10 Acorn Way
This site attracted only 1 representation, which raised no new issues above those considered in respect to the previous round of consultation.

3.11 In addition to the sites detailed above, several alternative sites have been proposed by developers, including south of Risley Village, east of Rushy Lane, north of Breadsall Hill Top, north of Breaston and Draycott and around Hopwell Hall. These were all considered through the Strategic Growth Area Assessment and Sustainability Appraisal processes and rejected in the previous round of consultation. An additional housing site north of Sowbrook Lane and warehouse site south-west of junction 25 have also been proposed. After further site by site consideration through the Strategic Growth Area Assessment and Sustainability Appraisal processes, all of these sites remain rejected.

3.12 In addition to site specific issues, neighbouring local planning authorities and government agencies have raised some additional issues, including the duty to cooperate and the current extent of the evidence base for the Erewash Core Strategy Review.

3.13 Duty to Cooperate
The duty to cooperate is a legal requirement to hold meaningful discussions with neighbouring local planning authorities on strategic cross-boundary issues. In this respect, Erewash Borough has been asking neighbouring local planning authorities for the last two years about their ability to accommodate some of Erewash's growth. This is necessary to demonstrate that Erewash Borough has exhausted all options to avoid building in the Green Belt. To date, no definitive response to these queries have been provided. Nevertheless, officers consider that this lack of response from neighbouring local planning authorities should not act as an impediment to the progress of the Erewash Core Strategy Review.

3.14 Erewash Borough has also held multiple meetings with neighbouring local planning authorities to establish what other, if any, strategic cross-boundary issues require meaningful discussion. Amber Valley Borough and Derbyshire County have confirmed that they consider the Green Belt separation of Heanor from Ilkeston to be such an issue. This issue has already been addressed in this report under the discussions of the proposals for housing north of Cotmanhay no other responses to suggestions from Erewash Borough have been received, with the Derby Housing Market Area local planning authorities concludin

not possible for them to make such comments until they see the Proposed Core Strategy. Consequently, progression to the Proposed Core Strategy stage appears necessary in order to further progress the duty to cooperate.

3.15 Evidence Base

The National Planning Policy Framework requires local development plans to be justified by adequate and proportionate evidence. Traffic modelling for the Stanton masterplan SPD identified the effectiveness of a relief road for Kirk Hallam in relieving traffic impacts on that community. Further modelling through the East Midlands Gateway study concluded that no additional strategic highway infrastructure was needed in Erewash to accommodate the currently proposed levels of growth. Individual site modelling in the Strategic Growth Assessments identified which junctions were likely to be most impacted. In their representations, Highways England advise that their high-level review finds no impact on the strategic road network, and Derbyshire County Council (Highways) do not identify any unacceptable impacts on the local highway network or propose any necessary mitigation. Notwithstanding this, both authorities recommend further modelling. At this stage such modelling will identify which junctions could benefit from additional capacity improvements, a matter considered to be more appropriate at the planning application stage. Nevertheless, a further round of traffic modelling is being commissioned in consultation with the highways authorities, in order to inform the future independent examination.

3.16 In respect to open space for sport and recreation, a recent assessment of playing pitches in Ilkeston confirmed a surplus of provision. Nevertheless, a detailed Borough wide review is underway in partnership with Sports England to inform the open space requirements for the specific housing proposals. Given the current surplus identified, the review will inform the re-purposing of existing under-used greenspace.

3.17 A number of other detailed issues were raised during the consultation which would be more appropriate for consideration through subsequent planning application processes. Nevertheless, many of these have been subject to consideration through the Strategic Growth Area Assessment and Sustainability Appraisal processes. It is therefore concluded that adequate and proportionate evidence has been provided to justify the proposals of the Core Strategy Review. Consequently, the Statement of Consultation at Appendix 1 to this report is recommended for approval.

4 Draft Sustainability Appraisal

4.1 A critique of the Draft Sustainability Appraisal to date has been its focus on strategy, rather than on specific sites. In response the Sustainability Appraisal has now been extended to assess all the competing Green Belt sites proposed through the Strategic Housing Land Availability Assessment. As a consequence, the Draft Sustainability Appraisal is now over 1,400 pages long. The 27 page main document is attached at Appendix 2 to this report, with its own Appendices A1 through to D1 available electronically.

4.2 Sustainability Appraisal is not the only tool for site selection, as it does not take account of impact on the Green Belt (which is a policy, rather than an environmental issue), or the deliverability of sites. Nevertheless, the Stanton South, West Hallam Depot, Kirk Hallam, Cotmanhay and Acorn Way sites e the most sustainable. Of these, the West Hallam Depot is no longer available for housing development and therefore, its housing development is no long policy of the Proposed Core Strategy.

4.3 Two sites were assessed as more sustainable than the land North of Spondon, these being Land North of West Hallam and Land North of Draycott and Breaston. The elevated scores of the latter two sites are largely a function of their size, each being able to support over 1,000 homes and therefore to provide largely self-supporting neighbourhoods. However, after taking into account the brownfield capacity of the existing built up areas, South Stanton, and the other more sustainable Green Belt sites at Kirk Hallam, Cotmanhay and Acorn Way into account, a further site of 1,000 homes is not needed to meet the Borough's housing requirements. As it is an important principle of the National Planning Policy Framework that Green Belt should only be released for housing in exceptional circumstances, there is no case for allocating either the Land North of West Hallam or Land North of Draycott and Breaston in their entirety. Smaller developments at these locations would not benefit from the advantages of scale, and would therefore be less sustainable. On that basis, the Land North of the Spondon site is the most suitable for providing the borough's remaining housing need.

4.4 The Sustainability Appraisal in its entirety is therefore recommended for public consultation and submission to the Secretary of State.

Proposed Core Strategy Review

5.1 The Proposed Core Strategy Review at Appendix 3 to this report is a partial review, and the majority of the existing Core Strategy and saved Local Plan policies will remain part of the development plan. The new policies, which are considered necessary to address Erewash Borough Council's out of date development plan policy position are summarised below.

5.2 Strategic Policy 1 sets out the housing strategy and consequent distribution of housing around the Borough. Strategic Policy 1.1 sets out the strategic design criteria applicable to all strategic housing sites, including requirements relating to development character, green space and accessibility. Strategic Policies 1.2 to 1.6 set out site specific criteria for each of the proposed housing sites, including appropriate site specific mitigation for transport, green space and social infrastructure.

5.3 Strategic Policy 2 sets out the employment strategy, which includes the safeguarding of key industrial estates to maintain the employment base of the Borough. It is supported by Strategic Policy 2.1, which allocates Stanton North for employment development. That policy is closely aligned to the current planning application for land north of Lows Lane, the two having been developed in tandem. The exceptions to this are additional requirements in the Strategic Policy for biodiversity and transport mitigation.

5.4 Strategic Policy 3 sets out the strategy for town centres as thriving hubs of service provision and commercial activity. The designated extents of Ilkeston and Long Eaton Town Centres are retained, as are those of Sandiacre and Borrowash Local Centres. A new Local Centre is proposed for Kirk Hallam in association with the housing development proposed there. In addition, Village Centres are defined for the first time, to help protect and promote service provision in Breaston. Draycott, Little Eaton and West Hallam. A new Village Centre is proposed to serve the new community at South Stanton.

5.5 Strategic Policy 4 sets out the transport strategy for the Borough. This includes the Kirk Hallam Relief Road to be provided in conjunction with housing development at Kirk Hallam, and the replacement junction at Lows Lane / Ilkeston Road / Sowbrook Lane to be safeguarded by the employment site at Stanton North and provided by the housing development at South Stanton. Long distance multi-user trails (for walking, cycling and horse riding) are proposed along the Great Northern Greenway former Nottingham to Derby railway line, and along the Trent Valley Way linking Trent Lock to Attenborough Nature Reserve.

5.6 Finally, Strategic Policy 5 sets out the green infrastructure strategy. This realises the aspirations of the previous Core Strategy for green infrastructure corridors by designating such corridors along the Trent, Erewash and Derwent rivers and the Nutbrook canal. All of these areas perform multiple green infrastructure functions including managing flood risk, providing wildlife habitat, supporting recreational routeways and providing for rural recreation. The intention of the policy is to preserve and enhance those functions.

5.7 As has been discussed above, the policies of the Core Strategy Review have been written with due regard to the responses of the previous consultations and the findings of the Sustainability Appraisal. The existing policies they would replace are listed at the back of the Core Strategy.

5.8 The Proposed Core Strategy Review at Appendix 3 to this report is therefore recommended for public consultation and submission to the Secretary of State. It is proposed that the consultation will be for a period of 8 weeks.

6 Options

6.1 The options available to Council are:

To approve the Statement of Consultation at Appendix 1 and approve the Sustainability Appraisal and Proposed Core Strategy Review at Appendices 2 and 3 for public consultation and subsequent submission to the Secretary of State for public examination. This would bring the council a step closer to addressing the ongoing undersupply of housing and employment land in the Borough. This is the recommended option.

b) To not approve the Statement of Consultation at Appendix 1 or approve the Sustainability Appraisal and Proposed Core Strategy Review at Appendices 2 and 3 for public consultation and subsequent submission to the Secretary of State for public examination. This would not bring the council any closer to addressing the ongoing undersupply of housing and employment land in the Borough, extending the period of time the Borough is likely to continue to fail the Government’s housing delivery test and raising the risk of speculative development and planning by appeal.

c) To approve an amended Statement of Consultation at Appendix 1 or approve an amended Sustainability Appraisal at Appendix 2 or an amended Proposed Core Strategy Review at Appendix 3 for public consultation and subsequent submission to the Secretary of State for public examination. Any amendmen

Statement of Consultation or Sustainability Appraisal would have to be reflected as necessary in the Proposed Core Strategy. Any amendments to the Proposed Core Strategy would need to be justified in respect to the Statement of Consultation, the Sustainability Appraisal, or other overriding issues such as Green Belt policy or deliverability.

7 Risk and financial implications

7.1 Should the Core Strategy Review be delayed, subsequent planning appeals could result in significant costs not allowed for in the Council's Annual Budget.

8 Legal implications

8.1 The Council has a statutory duty to review the Core Strategy, under the Planning and Compulsory Purchase Act 2004 (as amended).

9 Personnel implications

9.1 There are no direct personnel implications arising from this report.

10 Alignment to council priorities

Corporate Plan 2021-2023

10.1 The recommendation of this report would contribute towards the Corporate Plan priorities for "a welcoming borough that is clean and safe" and "planning for the future".

Background papers

Draft Sustainability Appraisal 2020
Erewash Core Strategy Review – Options for Growth January 2020
Statement of Consultation March 2021
Core Strategy Review – Revised Options for Growth March 2021

Appendices

Appendix 1 – Statement of Consultation January 2022
Appendix 2 – Draft Sustainability Appraisal 2022
Appendix 3 – Proposed Core Strategy Review January 2022
Appendix 4 – Proposed Core Strategy Review Policies Map

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Note: In preparing this report due regard has been had to human rights, prevention of crime and disorder, environmental, efficiency and health considerations as appropriate. An Equalities Impact Assessment has been completed or is not required. Relevant officers have been consulted in relation to any legal, financial, personnel or property implications and comments received are reflected in the report.

Habitats Regulation Assessment - Screening Exercise

Contents:

Appendices:

Appendix D: Qualifying features, identified threats and pressures

1.0. Background:

Erewash Borough Council is undertaking a review of its adopted Core Strategy (March 2014). This began with an 'Options for Growth' (Regulation 18) document published in January 2020. It identified several potentially suitable locations for large-scale, strategic housing sites, each supported by accompanying draft Sustainability Appraisal (SA) confirming the sites were located in spatially sustainable locations.

A further Regulation 18 consultation, a 'Revised Options for Growth', has since taken place in March 2021. This presented a refined set of strategic housing allocations, with these intended to contribute towards the Council's long-term housing requirement established by the Government's Standard Method formula and which subsequently has been translated into a local housing need (LHN) figure. Details of this consultation can be found on the Council's website where information about the Local Plan review is presented.

A combination of the adopted plan being out-of-date and a pressing need to address continuing under-delivery of new housing sees the Council committed to making ambitious, yet realistic, progress over replacing the Erewash Core Strategy. The Council's current Local Development Scheme (LDS), published in March 2021, presents a timetable that sees the release of the Publication (Regulation 19) version of the plan scheduled to occur in January 2022. Progress towards this milestone has been slightly delayed, with the intention that consultation will begin in March 2022 subject to approval.

In advance of the Publication stage, and as advised by Government guidance concerning the production of Habitats Regulation Assessment, the Council wishes to seek the specific views of Natural England in its capacity as a statutory nature conservation body (SNCB). The Council specifically seeks views over the suitability and robustness of the work carried out to date and the conclusions reached in regards to the screening exercise presented by this document.

2.0. Previous Habitats Regulation Assessment work:

The adopted 2014 Erewash Core Strategy was supported by a Habitats Regulation Assessment (HRA) undertaken by the ecological consultants David Tyldesley Associates (DTA). The HRA, published in 2012, was jointly commissioned by the five Nottingham Core Housing Market Area (HMA) councils who at the time were working together to produce an aligned set of Local Plans as a way of coordinating major growth proposals across Greater Nottingham.

The HRA flagged a proposed housing allocation in Gedling Borough in the north of the Greater Nottingham area as having a potential effect on a nearby area of woodland associated with the Sherwood Forest candidate Special Protection Area (cSPA). Further screening/assessment focused on the impacts of several potential housing sites elsewhere around Gedling Borough, and in particular, the scale of growth planned at the settlement of Calverton. The HRA concluded that specified mitigation measures on identified sites in Gedling Borough were necessary to reduce the assessed impact of future development to an allowabl

For Erewash Borough, the 2012 HRA concluded that none of the provisions made by its Core Strategy for housing or employment development would result in a detrimental impact on any protected European sites. As such, the policies in the adopted Core Strategy were unaltered by the HRA screening process.

Copies of both the Nottingham Core HMA HRA and the David Tyldesley Associates work can be made available on request.

3.0 Legal requirements and the current plan-making position:

Notwithstanding the conclusions of the 2012 HRA in respect of planned growth within Erewash, the current review of the Borough's Local Plan requires the Council to assess whether the emerging policies would result in significant harm to the designated features of a European site. A HRA is required by the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations') and the Council, fulfilling its legal obligations as a 'competent authority', must assess via HRA whether the emerging policies it is preparing would significantly harm the designated features of a European site.

The Erewash Core Strategy review sits separately from the Greater Nottingham Strategic Plan (GNSP) currently being prepared by the four other Core HMA authorities (Broxtowe, Gedling, Nottingham City and Rushcliffe). For the avoidance of doubt, this HRA is therefore being pursued independently from any equivalent work being undertaken by the other Greater Nottingham councils in support of the GNSP.

4.0. Habitats Regulation Assessment (HRA):

Article 6 of the Habitats Regulations requires assessment where a plan or project (the Erewash Core Strategy review is considered an example of the former) may give rise to significant effects upon European sites. These sites comprise a network of sensitive areas and environments where natural habitats and species require careful conservation due to their rare, endangered or vulnerable condition.

European sites span the following environmental designations:

- Special Areas of Conservation (SACs);
- Possible Special Areas of Conservation (pSAC);
- Special Protection Areas (SPAs);
- Potential Special Protection Areas (pSPA); and
- Ramsar sites (wetlands of international importance)
- Marine Conservation Zones (MCZ)

HRA involves three stages. The need to complete all three is dependent on the level of effect the Council establishes through its assessment. A first stag involves a screening exercise to check if the plan is likely to have a significant effect on any European site's conservation objectives. If this cannot be

demonstrated then no further work is necessary – although this should be confirmed in conjunction with Natural England. However, if screening cannot rule out the risk of the plan having a significant effect then a second stage, Appropriate Assessment (AA), should be undertaken to explore the linkages between the plan and any identified European sites in more detail. A third stage considers the grounds for a plan's exemption owing to it carrying such sufficient importance that it justifies the possibility (or certainty) of damage occurring to a European site(s).

A vital principle underpinning HRA is the need for the Council to follow a precautionary approach at each required stage. The Council, as a competent authority, must be sure that the plan will have no adverse effect on site integrity (which also includes any potential cumulative effects).

5.0. Stage One (Screening):

Stage one of the HRA comprises a screening exercise. This enables the Council to understand which (if any) sites falling under the above designations listed at 4.2 can be found either within or in close proximity to the administrative boundaries the plan will apply to. To reiterate, the Core Strategy review document will apply only to the administrative area of Erewash Borough.

In the absence of prescriptive advice or guidance that sets out a defined geographical scope of a HRA that supports a Local Plan, the assessment has instead been influenced by identified impact pathways rather than arbitrary distance radiuses. Distance alone should not be seen as the sole metric influencing whether a plan's proposals would affect the conservation objectives of any European site. Notwithstanding this, information on distances remains key to understand the strength of relationship between the plan's area of coverage and the nearest identified European site. Some designations may also have an impact risk zone (IRZ). This provides helpful guidance to steer the work of a HRA in understanding the sensitivities of certain designations, with any relevant IRZs highlighted by the screening exercise.

Utilising spatial mapping obtained from DEFRA's MAGIC map portal, the Council has been able to locate each of the nearest European site designations listed at 4.2.

The following table (Table 1) presents two relevant distances. For each identified European site designation, the table shows its distance to a) the edge of the area the Core Strategy review applies to (i.e. the closest part of Erewash Borough), and b) the nearest draft strategic housing and employment allocation being included within the plan. A schedule of these allocation sites can be found at Appendix A. Both distances are measured using direct lines as opposed to following physical features found at ground level (roads, rights of way, watercourses etc.). The details presented by Table 1 have been mapped and are shown at Appendix B. Further information looking into impact pathways for the identified European sites is presented later in this document.

Table 1: Closest European sites to Erewash Borough

Distance	SACs	cSAC	SPAs	cSPA	Ramsar
To edge of borough	Gang Mine - 13.8km	None within 50km of Borough	Peak District Moors (South Pennine Moors – Phase 1) - 23.2km	None within 50km of Borough	Midland Meres & Mosses -36.9km
To nearest strategic allocation	Acorn Way (SGA1) – 20.1km	None within 50km of a strategic allocation	North of Cotmanhay (SGA7) - 26.7km	None within 50km of a strategic allocation	Acorn Way (SGA1) – 36.9km

Table 1 confirms the existence of consistently long distances between the identified European sites and the Borough's boundary. No recorded distance is lower when a European site is measured to the closest draft Core Strategy review allocation inside Erewash.

The information presented by Table 1 usefully provides context on the distance between European sites and the Local Plan's area of coverage. Analysis of other HRA screening exercises undertaken in support of local authority plan-making shows noticeable variations in the zones of scope used as a guide to determine the level of effect a plan may have on designations. The absence of a consistently applied, fixed distance the Council can rely upon to benchmark a realistic area of influence demonstrates the importance of understanding impact pathways to scope any effects.

In addition to proposed residential and employment site allocations, it is also necessary to assess any possible impacts to European sites arising from the content of topic-based policies included within the Publication version of the Core Strategy review. The diverse range of policies cover spatial planning matters from the incorporation of good design at strategic allocation sites to the identification of key Green Infrastructure assets across the Borough. The Screening Exercise will look at each draft policy in turn and consider what, if any, impact on those European sites identified at Table 1 above.

Table 2 introduces the six non-site specific policies and offers commentary on any identifiable links and connections between the scope of the policy, its intended implementation and the closest European sites to Erewash Borough. It is encouraged that the table is read alongside the Core Strategy review – Publication version which includes all draft policies in full.

Table 2: Assessment of non-site specific policies on European sites:

Policy	Scope of Policy	Perceived impacts
Strategic Policy 1 - Housing	This policy sets out the number of homes the Plan is required to deliver and a sustainable spatial distribution of housing around the Borough.	The majority of housing growth in Erewash will be delivered within identified settlements (mainly at the Borough's two towns), largely on brownfield land. Strategic housing sites are expected to result in the largest impacts, but as shown at Table 1, these are located a significant distance away from the nearest Eur sites. So this policy would not impact upon conditions at European sites.

Strategic Policy 1.1 – Strategic Housing Sites	This policy introduces a set of design principles that all five of the strategic housing sites allocations should introduce to embed sustainability into each of the developments.	The introduction of design-based principles that development at each of the strategic housing sites should follow is not thought to impact in any way on conditions at those identified European sites in Table 1.
Strategic Policy 2 – Employment	This policy establishes the required scale of new employment land needed to meet assessed needs in the Borough. It also identifies several key strategic employment zones that require long-term protection.	The provision of new employment land is expected to be met at the Stanton North allocation. Similarly to the strategic housing sites, the distance between the Stanton North site and European sites is extremely unlikely to result in any detrimental effects to conservation objectives of each identified site. The identification of strategically important employment zones merely acts to protect existing concentrations of economic activity, thus also not impacting on distant European sites.
Strategic Policy 3 – Town, Local & Village Centres	This policy sets out a hierarchy of retail centres across the Borough whilst identifying what preferred town centres uses with identified centres are.	The identification and consolidation of the Borough's retail centres largely maintains the current hierarchy with the addition of several village centres at the lowest end of the hierarchy. As such, this would not impact on conditions at any of the identified European sites.
Strategic Policy 4 – Transport	This policy establishes three specific transport-orientated projects required to create the necessary transport infrastructure to support the anticipated level of residential and employment growth in the Borough.	The three transport infrastructure projects that are explicitly identified within this policy are necessary to ensure sustainable travel and movement can occur across the Borough. The construction of a relief road to the south west of Kirk Hallam is necessary to absorb the additional trips created as a result of SGA25's development of 1,300 homes. Whilst this will result in the net addition of private car journeys, the relief road, planned public transport provision and walkable neighbourhood principles embedded in the site's layout should help to mitigate the impacts of this development – preventing any effects to the conservation objectives or conditions at any of the European sites.
Strategic Policy 5 – Green Infrastructure	This policy identifies four specific zones which recognise significant assets of the Green Infrastructure network in Erewash, whilst setting out objectives for their improvement and also the management of land-uses with the zones.	Given the policy merely aims to identify and strengthen the role played by a strategic Green Infrastructure network across the Borough with minimal, if any, built development; it is extremely unlikely that such an action would result in any detrimental effects to any of the European designation sites.

6.0. Conservation objectives:

Regulation 35 of the Habitats Regulations establishes that the statutory nature conservation body (Natural England) has a duty to inform what conservation objectives are to a relevant/competent authority responsible for a European site. This includes a need to provide advice detailing what, if any, operations may cause deterioration in the features which has prompted the site to be originally designated.

Conservation objectives for a European site represent the aims of the Habitats and Birds Directives in relation to that site. This allows plan-makers and other interested parties to understand how habitats and species of European Community importance should be maintained or restored to 'favourable conservation status' (FCS) as defined by Article 1 of the Habitats Directive. This is further explained below.

The conservation status of a natural habitat and a species will be regarded as 'favourable' when the following conditions can be shown:

Natural habitat:

• Its natural range, and the area it covers within that range, are stable or increasing;
• The specific structure and functions which are necessary to support the species long-term maintenance exist and are likely to exist for the foreseeable future;
• Conservation status of typical species is favourable as defined in Article 1(i); and
• Data can show the species is maintaining itself on a long-term basis as a viable component of its natural habitat.

Species:

• Species data demonstrates that it is maintaining itself on a long-term basis as a viable component of its natural habitat;
• The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
• There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Guidance indicates the Habitats Directive intends FCS to be applied at a singular site level, as well as to habitats and species across their entire recorded European range. Consequently, to adequately express the aims of Habitats Directive for an individual site, its conservation objectives are essentially to maintain (or restore) the habitats and species of the site at (or to) FCS.

The Conservation Objectives for European sites identified within Table 1 are available to view at Natural England's website and summaries are provided at Appendix C. The following table (Table 3) provides more geographic and technical information on each European site identified as part of this screening e

Table 3: Further information about nearest European sites:

European site	Identification number	Broad location	Type of designation
Gang Mine	UK 0012817	North of Wirksworth	SAC
Peak District Moors (South Pennine Moors – Phase 1)	UK 0030280	Extending northwards of Darley Dale	SPA
Midland Meres & Mosses	UK 11043	South-west of Uttoxeter	Ramsar

7.0. Threats and vulnerabilities:

As part of its role as the country's statutory nature conservation body, Natural England publish Site Improvement Plans (SIPs) for each European site. These specify the qualifying features displayed by a site and identify the distinct biodiversity characteristics which has led to the granting of one of SAC, SPA or Ramsar status.

Each qualifying feature is naturally susceptible to a diverse range of threats and pressures and these are flagged by each site's SIP. Should threats and pressures to the qualifying features be exacerbated then a site's conservation status may be weakened and undermined with a risk that it may be subjected to a likely significant effect.

Details of the qualifying features and identified threats/pressures for European sites flagged by this screening exercise can be obtained from Natural England's website. Summaries of these can be found at Appendix D to this document.

8.0. Initial screening and impact pathways:

The importance of understanding and exploring any impacts created as a result of the policies within a Plan (and their subsequent implementation) affecting sensitive and qualifying features at designated European sites is a vital element of the HRA process.

Such relationships are known as impact pathways and can arise from issues connected to increased recreational pressures, air quality impacts, changes to the quality of water and the general influence of urbanisation and all consequential forms of human activity. The threats which are likely to affect conditions at European sites are set out by individual SIPs and these will principally help the Council to understand what, if any, effect may arise from the selection of draft strategic development sites in the Borough.

Residential development of both minor and major scale is often cited, justifiably in many instances, as the most invasive and influential act which can affe

pathway and present a threat to a European site(s). The Core Strategy review presents five strategic housing locations - two just inside the Borough's administrative boundary with Derby City Council and three directly adjoining the town of Ilkeston. These locations are geographically dispersed around the Borough, with the three Ilkeston sites projecting the town outwards in a north, west and southerly direction. This reaffirms that no major concentrations of new homes comprising several thousand new homes are arising from where the draft allocation sites are located.

Analysing the distances between the nearest recorded SAC, SPA and Ramsar European sites and Erewash, it is clear the sizeable gaps present no realistic prospects of one or more (in combination) impact pathways being identifiable. The Borough's closest proposed strategic housing site to any European site is 20.1km away and sees two neighbouring local authorities (Derby City and Amber Valley) positioned in-between Erewash and Derbyshire Dales - the latter being the administrative council area Gang Mine is located within.

The general composition of land-uses between the Borough and the various European sites nearest Erewash should help to demonstrate that there is little, if any, prospect of development at any of the draft allocation sites influencing in a meaningful way on the condition of European sites. Significant and extensively urbanised areas and built environments can be found between the edge of the Local Plan's area of coverage and designations at Gang Mines, Peak District Moors and Midland Meres & Mosses.

Gang Mines SAC has previously been subject of extensive lead mining operations. This has resulted in the formation of spoil heaps, hummocks and hollows across the site. Varying levels of heavy metal is contained within ground soils, contributing to a mosaic of plant communities reflecting these inconsistencies. Unworked land supports neutral grasslands and scrub habitat on deeper soils. The risk to this Special Area of Conservation is posed by air pollution, and more specifically the impact of atmospheric nitrogen deposition.

The South Pennine Moors Special Protection Area covers a substantial area of land stretching northwards from Matlock. It covers extensive tracts of semi-natural moorland habitats including upland heath and blanket mire. A diverse mosaic of habitats contributes to the ornithological interests, which comprises birds of prey and waders. As expected with any European site extending across such a vast geography, a sizeable number of issues each with the potential to effect conditions at the SPA have been identified within the SIP.

Midland Meres and Mosses Ramsar site incorporates a large number of sites collectively sized at over 500 hectares. These sites display lowland open water and peatland habitat characteristics that support an abundance of rare species of plants and invertebrates.

9.0. Conclusions:

This HRA screening exercise has examined the geographic relationship between the closest European sites to Erewash Borough and the sites the counc progress as allocations in its emerging Local Plan.

As highlighted by section 5.0, one of the more noticeable elements of this HRA screening is the identification of long distances between the Borough generally and the nearest designated European sites. While these offer a strong indication that the strength of relationship between potential development and areas of great environmental sensitivity are likely to be weak, an understanding of the site characteristics of each of the designations helps to confirm the rather limited degree of association.

On an individual basis, the Council believes that no single strategic allocation site has the ability to directly or indirectly compromise the characteristics of any of the European sites cited by the HRA by influencing impact pathways. However, it is necessary to also consider the 'in combination' effects development at each of the five housing allocations and the single employment allocation may have on the three European sites. As explained at 8.3, the largest concentration of new development is proposed to take place around the town of Ilkeston. In total, approximately 2,550 new homes are planned at locations around the settlement. With a site allocation situated at the southern, western and northern end of Ilkeston, this serves to disperse growth away from any one single location – helping to reduce the combined impacts associated with major sources of new development.

In conclusion, the Borough Council is of the view that no significant effects on the nearest identified European sites would arise because of development at any individual, or as a combination of several proposed strategic allocations. Also helping to arrive at this conclusion is the contributory factor of the Council's Sustainability Appraisal (SA). This has been developed in an iterative manner helping to steer the production of draft planning policies – both topic-based and site-based, through the various statutory stages of the Local Plan.

The main role of the SA in plan-making is to ensure the development of policies that contribute to positive sustainability outcomes in relation to a wide range of environmental, social and economic objectives. Overall, the SA is able to show that the allocation sites relevant to this HRA, both individually and in combination, are sustainable growth options. Where negative effects have been identified, the SA has shown what mitigation is necessary to minimise, and in some instances, remove these in order to improve the sustainability of policies.

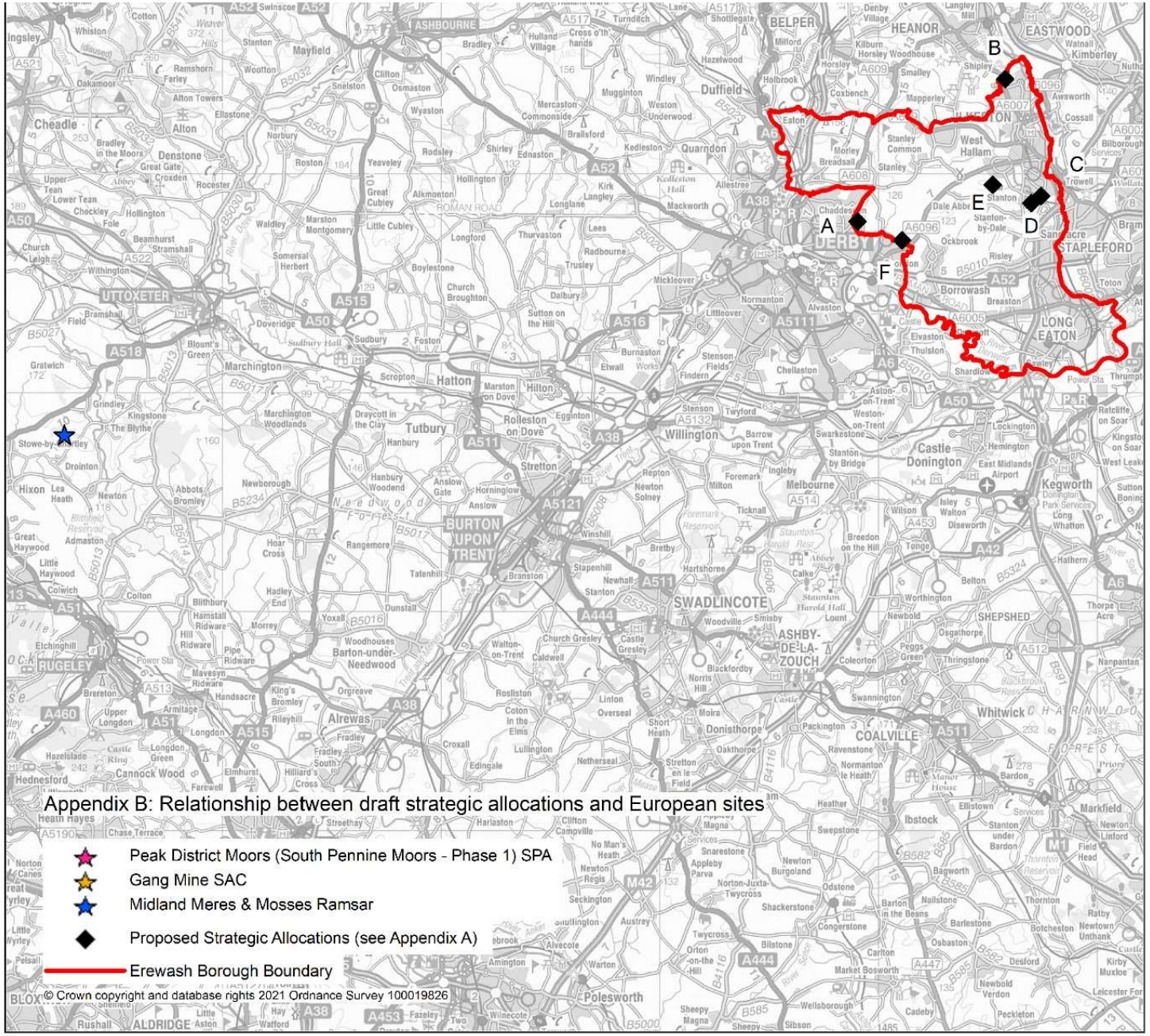
In addition to the effects from individual allocations, it is also important to consider any implications arising from the general, non-site specific policies scoped and assessed at Table 2. As the commentary within the table demonstrates, the nature of these policies is not expected to either individually or collectively impact adversely on conditions to be found at any of the identified European sites. In most instances, the policies help to offer protection to elements of the built and natural environment that would not directly lead to new development. The construction of a Kirk Hallam relief road to help link the South West Kirk Hallam strategic housing allocation would likely be the catalyst for additional vehicular trips being made across the local road network. However, other than providing highway access to the allocation, another notable attribute of the road would be to relieve local hotspots of congestion in and around that part of the Borough (South Ilkeston). The road's influence in reducing instances of standing traffic and waiting times at major junctions is likely to offset any impacts on environmental factors that the road's construction would bring.

The conclusions reached by the SA also help to reaffirm the Council's view that no significant effects on European sites are likely. As such, it is not proposed, nor is it necessary for the HRA to progress to any of the subsequent stages outlined at 4.3.

Appendix A: Schedule of site allocations in draft Local Plan

Site	Name	Land-use	Size (Ha)	Proposed capacity
A	Acorn Way (SGA1) Strategic Policy 1.3	Housing	26	600
B	North of Cotmanhay (SGA7) Strategic Policy 1.6	Housing	7.2	250
C	Stanton North Strategic Policy 2.1	Employment	80	-
D	Stanton South (SGA21) Strategic Policy 1.2	Housing	47	1,000
E	South-west of Kirk Hallam (SGA25) Strategic Policy 1.5	Housing	50	1,300
F	North of Spondon (SGA26) Strategic Policy 1.4	Housing	12.3	200

Appendix B: Relationship between Plan allocations and European sites



Appendix C: Main protected characteristics of European sites

• Gang Mine (Special Area for Conservation – SAC):

Annex I habitats that are a primary reason for selection of this site:

6130 Calaminarian grasslands of the Violetalia calaminariae
Gang Mine is an example of Calaminarian grasslands in an anthropogenic context in northern England. Natural limestone outcrops supporting species typical of calaminarian grasslands are rare and small, with a very impoverished flora. This site is included to provide an example of the habitat type on sedimentary rocks; it has colonised the large area of mine workings and spoil heaps on limestone. These are notable for the wide variations in slope, aspect and soil toxicity. Floristically the site contains the richest anthropogenic Calaminarian grasslands in the UK, with abundant spring sandwort Minuartia verna and alpine penny-cress Thlaspi caerulescens. Other species of grassland vegetation present include early-purple orchid Orchis mascula and dyer's greenweed Genista tinctoria. Many of these species are likely to be distinct genotypes adapted to soils rich in heavy metals.

Full details can be found at the following link:
Gang Mine - Special Areas of Conservation (jncc.gov.uk) (https://sac.jncc.gov.uk/site/UK0012817)

• Peak District Moors (South Pennine Moors – Phase 1) (Special Protection Area – SPA):
Annex I habitats that are a primary reason for selection of this site:
4030 European dry heaths

The site is representative of upland dry heath at the southern end of the Pennine range, the habitat's most south-easterly upland location in the UK. Dry heath covers extensive areas, occupies the lower slopes of the moors on mineral soils or where peat is thin, and occurs in transitions to acid grassland, wet heath and 7130 blanket bogs. The upland heath of the South Pennines is strongly dominated by heather Calluna vulgaris. Its main NVC types are H9 Calluna vulgaris – Deschampsia flexuosa heath and H12 Calluna vulgaris – Vaccinium myrtillus heath. More rarely H8 Calluna vulgaris – Ulex gallii heath and H10 Calluna vulgaris – Erica cinerea heath are found. On the higher, more exposed ground H18 Vaccinium myrtillus – Deschampsia flexuosa heath becomes more prominent. In the cloughs, or valleys, which extend into the heather moorlands, a greater mix of dwarf shrubs can be found together with more lichens and mosses. The moors support a rich invertebrate fauna, especially moths, and important bird assemblages.

7130 Blanket bogs (* if active bog) * Priority feature
This site represents blanket bog in the south Pennines, the most south-easterly occurrence of the habitat in Europe. The bog vegetation communities are botanically poor. Hare's-tail cottongrass Eriophorum vaginatum is often overwhelmingly dominant and the usual bog-building Sphagnum mosses are scarce. Where the blanket peats are slightly drier, heather Calluna vulgaris, crowberry Empetrum nigrum and bilberry Vaccinium myrtillus become more prominer

uncommon cloudberry Rubus chamaemorus is locally abundant in bog vegetation. Bog pools provide diversity and are often characterised by common cottongrass E. angustifolium. Substantial areas of the bog surface are eroding, and there are extensive areas of bare peat. In some areas erosion may be a natural process reflecting the great age (9000 years) of the south Pennine peats.

91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles

Around the fringes of the upland heath and bog of the south Pennines are blocks of old sessile oak woods, usually on slopes. These tend to be dryer than those further north and west, such that the bryophyte communities are less developed (although this lowered diversity may in some instances have been exaggerated by the effects of 19th century air pollution). Other components of the ground flora such as grasses, dwarf shrubs and ferns are common. Small areas of alder woodland along stream-sides add to the overall richness of the woods.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

4010 Northern Atlantic wet heaths with Erica tetralix

7140 Transition mires and quaking bogs

Full details can be found at the following link:

South Pennine Moors - Special Areas of Conservation (jncc.gov.uk) (https://sac.jncc.gov.uk/site/UK0030280)

• Midland Meres and Mosses (Ramsar):

Ramsar criterion 1:

The site comprises a diverse range of habitats from open water to raised bog.

Ramsar criterion 2:

Supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane Cicuta virosa and, elongated sedge Carex elongata. Also present are the nationally scarce bryophytes Dicranum affine and Sphagnum pulchrum. Also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insect listed for this site including the following endangered species: the moth Glyphipteryx lathamella, the caddisfly Hagenella clathrata and the sawfly Trichiosoma vitellinae.

Full details can be found at the following link:

Midland Meres and Mosses - Ramsar (jncc.gov.uk) (https://jncc.gov.uk/jncc-assets/RIS/UK11080.pdf)

Appendix D: Qualifying features, identified threats and pressures

• Gang Mine (Special Area for Conservation – SAC):

Threat: Air Pollution: Impact of atmospheric nitrogen deposition

Nitrogen deposition exceeds the site relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in a favourable condition on this site. This requires further investigation.

Action: 1A

Further investigate potential atmospheric nitrogen impacts on the site based on application of guidance from Chief Scientist's Group Nitrogen Task & Finish Group.

• Peak District Moors (South Pennine Moors – Phase 1) (Special Protection Area – SPA):

Qualifying features of the SPA:

A222(B) Asio flammeus: Short-eared owl

A098(B) Falco columbarius: Merlin

A140(B) Pluvialis apricaria : European golden plover

The site improvement plan (SIP) which is in place for the above SPA is a comprehensive and lengthy document that sets out 15 separate priorities and issues spanning a diverse range of activities which are identified as being a pressure or threat (or both) to the condition of habitats across the SPA.

A detailed Issues & Action Plan sets out 53 separate actions across the 15 priorities as a means to ensure the maintenance of acceptable habitat across the SPA.

Further details can be accessed from the following link:

Site Improvement Plan: South Pennine Moors - SIP225 (naturalengland.org.uk) (http://publications.naturalengland.org.uk/publication/5412834661892096)

• Midland Meres and Mosses (Ramsar):

Principal Features: The Meres and Mosses of the Clwyd-Shropshire-Cheshire-Staffordshire plain form an internationally important series of open water and peatland sites. "Meres" refer to pools, while "mosses" are mires or peatland sites. There are more than 60 meres and a smaller number of mosses. The meres range in depth from about one metre to 27m and vary between less than one hectare to 70ha, in area. The origin of most of the hollows can be accounted for by glaciation, which left depressions in the plain as ice sheets receded. However, a small number have been formed, at least in part, by more recent subsidence resulting from the removal in solution of underlying salt deposits. Although the majority of the meres are naturally nutrient rich (eutrophic), the water chemistry is very variable reflecting the heterogeneous nature of the surrounding drift deposits. Associated fringing habitats such as reedswamp, fen, carr and damp pasture add to the value of the meres. The development of these habitats is associated with peat accumulation which in some cases has led to the complete infilling of the basin. During this process the nutrient status of the peat surface changed and typically became nutrient poor (oligotrophic) and acidic, thus allowing species such as Sphagnum spp. to colonise. In a few cases colonisation of the water surface by floating vegetation has resulted in the formation of a "quaking bog" also known as a "schwingmoor". The site is also home to a number of rare species of plants associated with wetlands. The site contains the nationally scarce Elatine hexandra, Eleocharis acicularis, Cicuta virosa, Thelypteris palustris and Carex elongata. The site also contains an assemblage of invertebrates, including following rare wetland species. There are three species listed for the site which are considered to be endangered in Britain, these are the caddis fly Hage

clathrata, the fly Limnophila fasciata and the spider Cararita limnaea. Other listed wetland Red Data Book species are: the beetles Lathrobium rufipenne and Donacia aquatica, the flies Prionocera pubescens and Gonomyia abbreviata and the spider Sitticus floricola. (Criteria 2a).

Conservation Issues: Various broad activities recorded for the site include agriculture and grazing, fishing, hunting, recreation, research and conservation. This complex site has undergone partial eutrophication from human activities (although some of the mires are naturally eutrophic). Excess nutrients come from intensification of agriculture, fertilizer runoff and domestic and agricultural effluent.

Erewash Borough Council, Town Hall, Wharncliffe Road, Ilkeston, Derbyshire, DE7 5RP

0115 907 2244

Email the council (mailto:enquiries@erewash.gov.uk?subject=Website%20contact)

View our opening hours (/the-council-popular/contact-the-council.html)

Social media pages.

(https://twitter.com/ErewashBC) (https://www.facebook.com/erewashbc/) (https://www.erewash.gov.uk/youtube)

(https://erewash.gov.uk/instagram)

Appendix 3

Ref: SPS/0184 Date: 9th May 2021

Erewash Borough Council
Planning Policy
Council Offices,
Long Eaton,
Nottingham
NG10 1HU

Dear Sir/Madam,

Representations on behalf of Peveril Homes Limited - Erewash Core Strategy Review
Revised Options for Growth

Stone Planning Services/SC5 Planning represent Peveril Homes Limited who own land off Draycott Road, Breaston, Derbyshire. We are instructed to submit representations with regard to the Erewash Core Strategy Review – Revised Options for Growth.

Question 1 - Do you have any comments on the revised housing strategy.

In July 2020 we expressed concerns when consulted on the Draft Options for growth.

Our concerns related to the selection of the Growth Options that had been tested in the Sustainability Appraisal. Eight growth options were selected, and Option G related to "Extension of the Villages into the Green Belt".

The methodology defined Long Eaton as the "conurbation" and Ilkeston the "urban area". Hence, the remainder of the Borough's settlements are "Villages". We considered that the methodology is flawed in that there are a number of "large villages" such as Breaston and Borrowash and a number of much "smaller villages" such as Risley, Dale Moor, Stanley etc. The Core Strategy at para 2.2.2 highlighted Breaston as a "larger settlement".

The sustainability characteristics of villages in the two subcategories is generally very different such that the SA conclusions were too broad brush and failed to adequately test the sustainability of "Extension of Larger Villages into the Green Belt". Below we highlight some of the inconsistencies in the SA Assessment that arise:

1. Health & Well Being - This is scored as a major negative. Development adjacent large villages, such as Breaston, have established medical centres. Breaston has the Overdale Medical centre, where capacity could be increased. Increased services will improve accessibility for existing residents as well as new arrivals. An over provision of open space can be provided as an integral part of master planning, including the provision of allotments.
   There are numerous benefits accruing from a development adjacent Breaston. *This category would score a Minor or Major positive.*

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2. Community Safety -This is scored as a major negative. Good master planning and house design make a positive contribution to community safety. Rural crime is not an issue in the larger villages. We consider this assessment to be extremely negative
   This category would score a Minor positive or No Impact

3. Transport- This is scored as a minor negative. Breaston, for example has a very good bus service that links with Derby to the West and Nottingham to the East. Additional development on the route will not only help maintain the service but could lead to improvements. A number of the larger villages have good levels of local services such as Medical Centre, schools, shops, pub, employment, day nursery, churches, chemist, mobile library etc. That is not the case with smaller villages.
   This category would score No Impact.

4. Energy & Climate Change - This is scored as a minor negative. We do not agree that new development adjacent larger villages will have a major negative impact because of car dependency. Breaston, for example has the Indigo Trent Barton bus operating 4 Services per hour Monday to Friday in each direction. There is also a good Saturday and Sunday Service.
   This broad category would score No Impact or minor positive.

5. Pollution and Air Quality - This is scored as a major negative This assessment disregards the excellent bus services in some of the larger villages such as Breaston.
   This broad category would score No Impact.

6. Natural Environment. This is scored as a major negative. We do not agree with the generality that development adjacent to large villages will inevitably result in harm to biodiversity. Areas of low biodiversity value exist adjacent to the larger villages where very significant biodiversity enhancement can be achieved. Furthermore much improved public access to the broader public footpath and cycle network can be integrated into master plans to provide real accessibility gains.
   This broad category would score No Impact

We consider that the Sustainability Appraisal should have differentiated between larger villages which have numerous day to day services and good public transport and the smaller villages. The SA has taken the worst case village which is unreflective of a number of sustainable options. We suggest that the SA is reviewed to reflect the above.

To assist we attach a revised Sustainability Appraisal Assessment for "Extensions to Larger Villages in the Green Belt".

We have also previously expressed our concerns about a number of broader issues:

1. The consultation is a formal Regulation 18 consultation. It marks the start of the engagement stage of the Plan and normally represents the scoping stage to decide what should be included in the Plan. We are concerned that the consultation actually sets out the Council's "Preferred Options", more akin to a Regulation 19 consultation. The consultation clearly sets out the Council's Preferred Options although the evidence base is very limited. Could this be clarified?

2. The consultation documents primarily relate to housing needs. There is no relationship with other economic generating land uses such as employment and retail.

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3. There is no reference or acknowledgement of the impact of HS2 on the future housing and employment needs of the Borough.

4. Identifying Preferred Options that require the release of Green Belt should be supported by a Green Belt Review. Is there evidence that is available?

5. We would expect that adjacent local authorities, and particularly those in the Nottingham and Derby Housing Market Areas, had been consulted prior to the formal consultation process and their comments incorporated.

Notwithstanding the above our comments relate primarily to Site SGA20 and in particular the potential for reassessing the eastern part (37 hectare) of the site which is very different in character to the site as a whole (87 ha) and particularly to the western part.

The Growth Options Plan within the consultation document shows the distribution of housing sites across the Borough. The majority of rejected sites lie south of Ilkeston are there are just two small housing allocations on the edge of Derby within the area. This results in an unbalanced distribution across the Borough.

We fully acknowledge that a number of the rejected sites are very extensive, particularly those to the north west of Borrowash and their impact, in Green Belt and landscape terms, would be significant. However, other sites, of a smaller nature, could be developed with minimal impact in green belt and landscape terms.

Breaston is a sustainable settlement in the Borough of Erewash; it sits in good proximity to both Nottingham to the east and Derby to the west. It has a wide range of everyday facilities and is identified as a "larger settlement" in the Core Strategy along with Draycott, West Hallam and Borrowash. In our view it is capable of accommodating a proportionate level of development.

Site SGA20 - Land north of Draycott and Breaston (approximately 2,103 houses) was rejected as a Preferred Site by the Council. That site covered some 87 hectares. It was primarily rejected because of concerns regarding the merging of Draycott and Breaston. in our opinion a reduction in the size of the developable area to the eastern part only overcomes any concerns about the merging of settlements. To assist the Council we attach Plan 1 which shows the site in relation to both Breaston and Draycott. This clearly demonstrates that there will be no impact on the merging of the settlements. The built form development is confined to the eastern part of the site and skirts around the edge of the existing built form of Breaston. There is no physical connection with Draycott and development is no nearer to Draycott than at the current time.

The Council's Site Assessment of the larger SGA20 provides a comprehensive appraisal of the site:

1. Highway Capacity - The lack of capacity of the local highway network and at certain key junctions to cater for traffic serving 2,103 houses
2. Biodiversity - Potential loss of areas of biodiversity which could be mitigated and enhanced across the site. The impact on the Johnson Local Wildlife Site was noted. Mitigation could be provided with high quality green infrastructure of varying typologies.
Potential adverse impacts on the Attenborough Ponds SSSI.

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3. Public Transport - accessibility to the Indigo Service (Nottingham to Derby) was good. Increased frequency of service may be justified with the potential for some buses to divert into the site.
4. School provision - the expansion of existing primary schools is limited. There is capacity at secondary level.
5. Green infrastructure - the site adjoins the route of the former Derby & Sandiacre canal which is used as a footpath. There are opportunities to enhance this and create green linkages.
6. Community Facilities - this set out the site's location with regard to a range of community facilities.
7. Green belt - the site falls within the green belt and would result in the merging of Draycott and Breaston.
The extent of site SGA20 would result on a 50% increase over the combined settlement areas of Draycott and Breaston.
8. Heritage - development is 170-180 metres from the edge of Conservation Areas. There would be significant impacts, not least by the anticipated level of traffic passing through the Conservation Area.
9. Landscape - the site fails within the Trent Valley Washlands landscape character area. The northern part of SGA20 has maintained some of the original character, less so to the south.
10. Contamination - reasonable to assume that most of the site is free from contamination.

Our client owns the eastern part of that site covering some 37 hectares. The site is bordered to the north by the line of the old Derby canal which is now a footpath route together with hedgerows and a copse.

We submit an Illustrative Master Plan (Plan 2) which provides for approximately 300 houses. This would be a combination of market and affordable homes.

The potential for flooding is a major driver with regard the deliverability of the site. To inform the Master Plan Peveril Homes commissioned JBA Consulting to undertake a Hydraulic Modelling Study of the site. The report is attached for the Council's consideration. The Study would form the basis of a more detailed Flood Risk Assessment which would detail safe access routes, finished floor levels, any floodplain compensation and the design of bridges and culverts.

It concluded that the provision of housing development on areas was deliverable without detriment to existing residential properties.

The Master Plan provides for the following:

1. Vehicular access off Draycott Road in the vicinity of The Crescent.
2. Two parcels of residential development delivering in the region of 300 houses. The eastern section extends off Derby Road and to the rear of properties on Gregory Avenue. The western section lies to the north of Gregory Avenue and Hills Road.
3. Retention of all public rights of way.
4. Provision of additional pedestrian and cycle routes particularly to link to the route of the former Derby Canal along the northern boundary. The site links to the east onto Far Croft and to Hills Road/Gregory Avenue to the west.

5. Extensive green infrastructure that could deliver a range of typologies to be agreed with the Council. This would extend to approximately 23 hectares.
6. Provision of a linear copse along the entire northern boundary to create a new soft edge to the revised green belt boundary. Utilising the existing footpath along the northern boundary as the new Green Belt boundary would be consistent with advice within paragraph 139 of the Framework.
7. Retention of the Golden Stream and the Golden Brook.
8. Develop opportunities for biodiversity enhancement across the site.
9. Develop the landscape setting of what is currently a very unspectacular area of land.
10. Take account of existing sewers that cross the site.

In Green Belt terms the proposal would represent a northerly extension of Breaston. Unlike the larger site (SGA20) it would not impact on the gap between Breaston and Draycott or the wider gap with Derby. New long germ green belt boundaries would be established that provide opportunities to introduce strong landscape features. The built form element of the proposal would represent a small increase in the existing size of Breaston; the developed area would be just 14 ha. We believe that such an extension is commensurate with the scale of Breaston.

Assessing the reduced SGA20 site against the 5 purposes of including land within the Green Belt (paragraph 134 of the Framework) we conclude:

(i) To check the unrestricted sprawl of large, built up areas - the reduced proposal would provide for growth to Breaston in a sympathetic manner with a significant majority of the site being set aside for blue and green infrastructure. It would be a carefully designed proposal and provide significant landscape benefits.

(ii) To prevent neighbouring towns in merging into one another - the reduced proposal would not result in the merging of Breaston and Draycott. It has a very different impact on this green belt purpose compared with the larger SGA 20 site. The extension of Breaston would be to the North towards the route of the former Derby canal and not towards Draycott.

(iii) To assist in safeguarding the countryside from encroachment - the Council's assessment was strongly influenced by the impact on the separation between Breaston and Draycott. The reduced scheme does not have this impact. Breaston covers an area of approximately 124 hectares and the proposal would result in a built form development of approximately 14 hectares. Hence Breaston would be increased by 11.3%.

The assessment of the larger SGA20 site taking Breaston and Draycott together showed an increase of approximately 50% which was considered as being a "substantial expansion". The reduced proposal is significantly less than this and, in our view, acceptable in terms of encroachment.

(iv) To preserve the setting and special character of historic towns - the Breaston Conservation Area lies to the South and some distance away from the reduce site. Traffic flows from the reduced site (approximately 300 dwellings) when compared to the larger area (2,103 dwellings) will be significantly less and so have less impact on the Conservation Areas. As a consequence there will be minimal adverse impact on the historic character of Breaston and Draycott.

(v) To assist in urban regeneration, by encouraging the recycling of derelict and other urban land - the proposal would result in the loss of 14 hectares of Greenfield land but would also provide 23 hectares of green and blue infrastructure together with public access.

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Overall we are the view that this assessment demonstrates that the smaller deliverable site has significantly less impact on the five purposes of including land in the green belt compared with the previously promoted larger site. The smaller site is such that it could be developed without undue impact on the green belt.

In terms of other potential impacts used in the Council's assessment we comment as follows:

1. Highway network – the original analysis was for 2,103 + homes. The reduced proposal is for less than 15% of that. Any impacts on the local highway network will not be "severe" (para 109 - Framework). This would be demonstrate in a full Transport Assessment.
   SGA20 Map 1 in the Strategic Growth Area Assessments shows a potential access at point AP5 which could serve the development. This involves the construction of a mini roundabout on Derby Road at a point where visibility is good. This is confirmed in the Council's assessment.
   Access AP4 is also identified in the Council's assessment – this involves the extension of Hills Road into the site. To ensure no congestion on Hills Road leading onto Derby Road this access could serve a limited amount of development.
2. Loss of biodiversity – the provision of extensive areas of open space, copse planting, improvements to the Golden Stream and Golden Brook provides opportunities to significantly enhance biodiversity. A wide range of green infrastructure typologies would be created to include, formal and informal recreation, corridor to the route of the former Derby Canal to the north, corpses, allotments etc. This would all be supported by a Landscape and Ecological Management Plan which aims to raise biodiversity.
3. Public Transport – the Indigo service linking Breaston with Derby and Nottingham is a high quality frequent bus service. This is highly accessible from the reduced SGA20 site.
4. School provision – there is a local primary school in Breaston (Firfield); secondary education is provided at Wilsthorpe School. Peveril Homes is fully aware if its responsibilities with regard to education provision and will work with the Local Authorities to ensure there is adequate provision at all levels.
5. Green and Blue Infrastructure – Over 65% of the site would be set aside as Green and Blue Infrastructure. New linkages would be provided to the route of the former Derby Canal route along the northern boundary and linkages to existing residential areas utilising the existing public rights of way.
6. Community Facilities – the site is well located to everyday community facilities in Breaston and Draycott.
7. Green Belt – we note that the Council considers some 87 hectares for 2100 houses would result in coalescence between Breaston and Draycott. However, we feel that the reduced revised site incorporating just 37 hectares delivering approximately 300 houses with 65% of the site set aside for green and blue infrastructure scores very differently. The proposed built form would be close to the existing edge of development within Breaston and would have no impact on the coalescence between Draycott and Breaston. We therefore consider that the reduced proposal is acceptable in green belt terms and overall will enable a very significant improvement to public access to green infrastructure in the locality and in particular the creation of linkages to the route of the former Derby canal.
8. Heritage – this site is some distance from any heritage assets and will have minimal impact on the Breaston Conservation Area.

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9. Landscape – the existing landscape is unspectacular. With such extensive green infrastructure as an integral part of the proposal improvements to the landscape quality and diversity will arise.
10. Contamination – the site is unlikely to be contaminated.

We also note that there are some concerns regarding the drainage at the site. We can confirm that a Strategic Assessment of flood risk in the locality has been undertaken by JBA. It confirms that the site can accommodate areas of built form as indicated on the illustrated masterplan. It is important to note that development will not have any adverse impacts on flood risk for proposed or existing properties. The disposal of surface water is not an impediment to the development of the site.

Overall we believe that the reduced site area scores very well against the Council's criteria, and much different to the larger SGA20 assessment. Breaston is one of the "larger villages" in the Borough which has a wide range of everyday services. The site lies immediately adjacent to Breaston and in our view represents sustainable development.

We would welcome the opportunity to discuss the potential for development of the identified land off Draycott Road, Breaston.

We would be grateful if you would give careful consideration to our representations in progressing the Plan.

If you need anything further at this stage, then please come back to me.

Yours faithfully

Paul Stone
Director - Stone Planning Services Limited

Enclosures

1. Sustainability Appraisal for "Extensions to Larger Villages in the Green Belt".
2. Plan 1 – Smaller SGA site in relation to Breaston & Draycott.
3. Plan 2 - Indicative Master Plan for land off Draycott Road, Breaston
4. Hydraulic Modelling Study - land off Draycott Road, Breaston

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Appendix 4

Hydraulic Modelling study for Draycott Road, Breaston, Derbyshire

(DHJ-JBAU-XX-XX-RP-HM-S3-P01-Hydraulic_modelling_report.docx)

Draft Report

June 2020

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Revision History

Revision Ref/Date	Amendments	Issued to
P01 / June 2020	Draft Report	Tom Broster

Contract

This report describes work commissioned by Tom Broster on behalf of Peveril Homes, by an email dated 02/04/2020. Charlotte Turner and Olivier Saillofest of JBA Consulting carried out this work.

Prepared by ..... Charlotte Turner

Technician

Reviewed by ..... Olivier Saillofest BEng MSc CEng MCIWEM C.WEM

Technical Director

Purpose

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Executive summary

JBA Consulting was commissioned by Peveril Homes in April 2020 to refine the fluvial flood outlines in relation to their proposed development site at Draycott Road, Breaston. The site is crossed by the Golden Stream and the Golden Brook and, according to the Environment Agency's Flood Map for Planning, the access to the area located between these two watercourses is flooded.

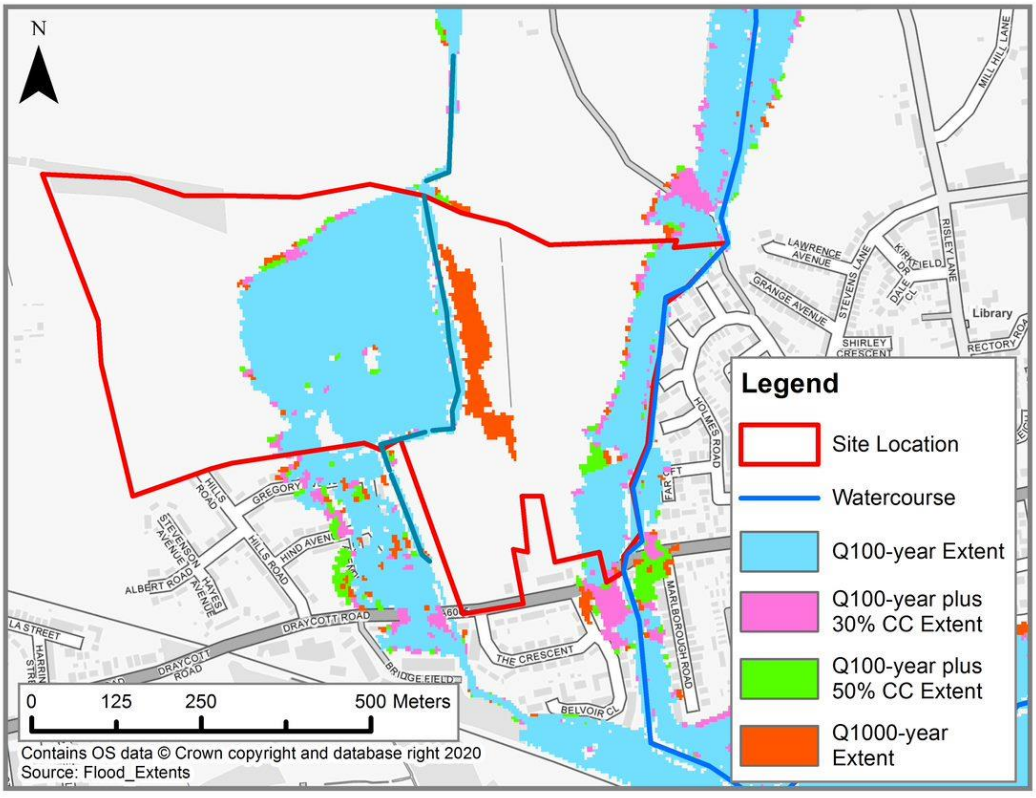
A copy of the River Erewash FLOOD MODELLER – TUFLOW hydraulic model (representing both watercourses) was obtained from the Environment Agency (EA) for use in this study (EA ref: EMD-163779). The model was built in 2013 by Edenvale Young Associates.

The model was updated with new fluvial flow estimates for the Golden Brook and Golden Stream (revised using 2020 hydrological methods), site-specific topographic survey data and 1m LiDAR flown over in 2017.

The hydraulic modelling was re-run for the 100-year, 100-year plus 30% climate change, 100-year plus 50% climate change and 1,000-year fluvial flood events. Model results show:

- Flooding occurs to the north-west of the development and towards the eastern site boundary during all fluvial flood events, as illustrated in Figure 0-1 below.

Figure 0-1-1: Flood Extents



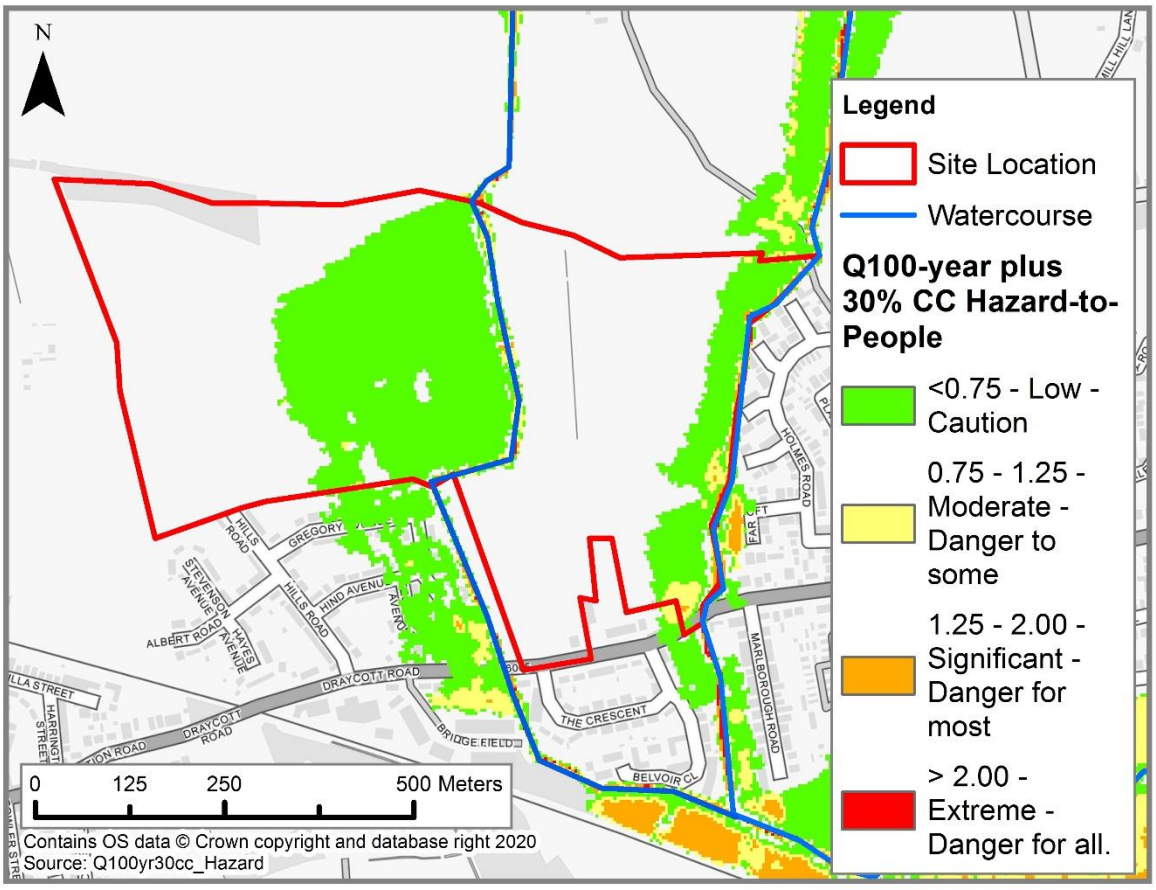
- During the 100-year fluvial flood event, depths of up to 0.48m (approximately) can be seen within the site boundary.
- During the 100-year fluvial flood event, flood levels up to 40.82m AOD (approximately) can be seen within the site boundary.
- During the 100-year plus 30% climate change fluvial flood event, depths of up to 0.56m (approximately) can be seen within the site boundary.

- During the 100-year plus 30% climate change fluvial flood event, flood levels up to 40.84m AOD (approximately) can be seen within the site boundary.
- During the 100-year plus 50% climate change fluvial flood event, depths of up to 0.61m (approximately) can be seen within the site boundary.
- During the 100-year plus 50% climate change fluvial flood event, flood levels up to 40.86m AOD (approximately) can be seen within the site boundary.
- During the 1000-year fluvial flood event, depths of up to 0.65m (approximately) can be seen within the site boundary.
- During the 1000-year fluvial flood event, flood levels up to 40.88m AOD (approximately) can be seen within the site boundary.

Safe access and egress to and from the site was reviewed to see if flooding would affect the proposed vehicular entrance to the site and access to the central part of the site (i.e. between the two watercourses). The entrance will be located off Draycott Road, opposite The Crescent (see Figure 0-1 for locations).

With the exception of river channels, the hazard to people rating will remain low across the whole of the site during the 100-year plus 30% climate change fluvial flood event (see Figure 0-2). This implies that safe access and egress to/from the central part of the site, albeit wet, is available. The 100-year plus 30% climate change hazard to people is also low along Draycott Road thus again implying that safe access and egress to /from the site, albeit wet, is available .

Figure 0-1-2: Hazard-to-people



Recommendations:

It is recommended that the results from this modelling study are taken into consideration in the Flood Risk Assessment when confirming:

- safe access routes
- the recommended minimum Finished Floor Levels for the proposed units
- the requirement for floodplain compensation
- the design of bridges/culverts crossing the watercourses.

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1 Introduction

1.1 Terms of reference

JBA Consulting was commissioned by Tom Broster on behalf of Peveril Homes by an email dated 02/04/2020 to confirm the fluvial flood risk from the Golden Stream and the Golden Brook in relation to their proposed development site at Draycott Road, Breaston.

A copy of the 2013 River Erewash hydraulic model was obtained from the Environment Agency (EA) to carry out this project.

1.2 Context

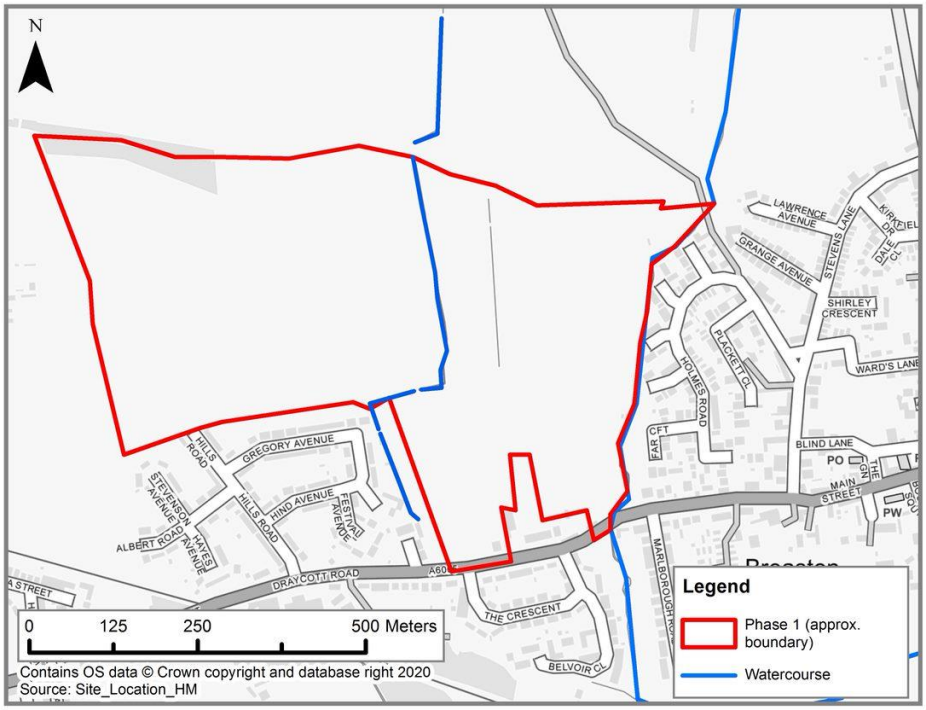
The site is located to the north of Draycott Road. The 36.9ha 'phase 1' part of the development will accommodate residential units.

The site currently sits within the Environment Agency's Flood Zone 2 and Flood Zone 3, covering majority of the development. This hydraulic modelling study aims to refine the flood outlines within the site boundary and identify potential safe access and egress issues.

1.3 Site Details

Table 1-1: Site Details

Site Address	Land off Draycott Road, Breaston, Derbyshire, DE72 3DB
Site Area	36.94 ha
Existing land use	Greenfield / brownfield
OS NGR	SK 45346 33377
Country	England
County	Derbyshire



1.4 General Approach

The Environment Agency were contacted to request the 2013 River Erewash Hydraulic model to assess flood risk in relation to the proposed site. The existing model is built in 1D-2D FLOOD MODELLER – TUFLOW.

A hydrological assessment was carried out to update fluvial flow estimates in the model.

To improve the accuracy of the results, the model geometry was also updated with site-specific topographic survey data and LiDAR data.

2 Approach

2.1 Data Availability

The River Erewash FLOOD MODELLER – TUFLOW hydraulic model was obtained from the Environment Agency (EA) for use in this study (EA ref: EMD-163779). The model was built in 2013 by Edenvale Young Associates. To improve the model surrounding the site at Draycott Road, several updates were made, and the model was re-run.

The updates include changing the fluvial flow estimates for the Golden Brook and Golden Stream which run parallel through the site, adding a site-specific topographic survey (attached in appendix A) and updating the LiDAR being read into the model. LiDAR data was obtained from the Open Data website to represent ground levels within the floodplain. The data from the DEFRA website contained 1m LiDAR last flown in 2017.

2.2 Input data quality Assessment

Additional checks were conducted between the topographic survey and the LIDAR to ensure that there were no major differences in elevation between the datasets (which could result in steps in the model geometry). Figure 2-1 shows a comparison between the 1m LiDAR data and the topographic survey data.

Figure 2-1: Topographic Survey minus LiDAR

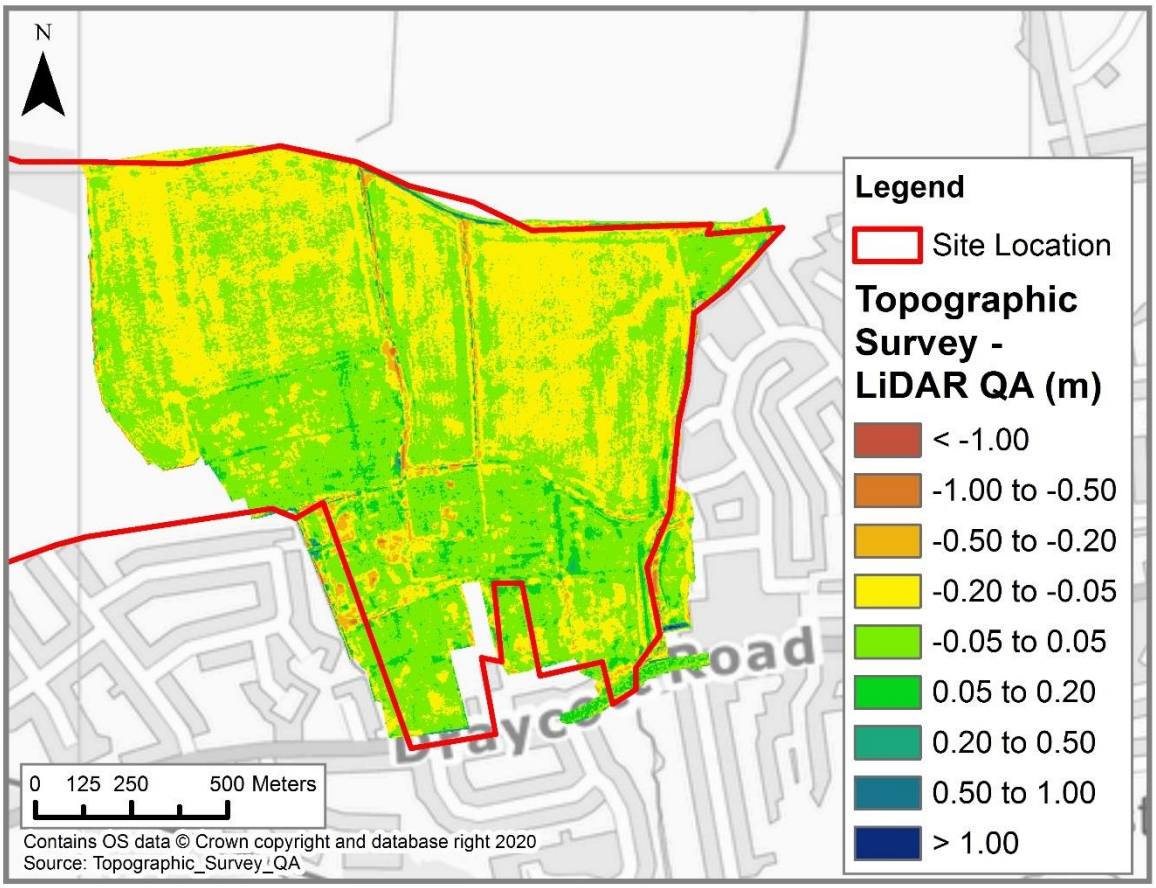
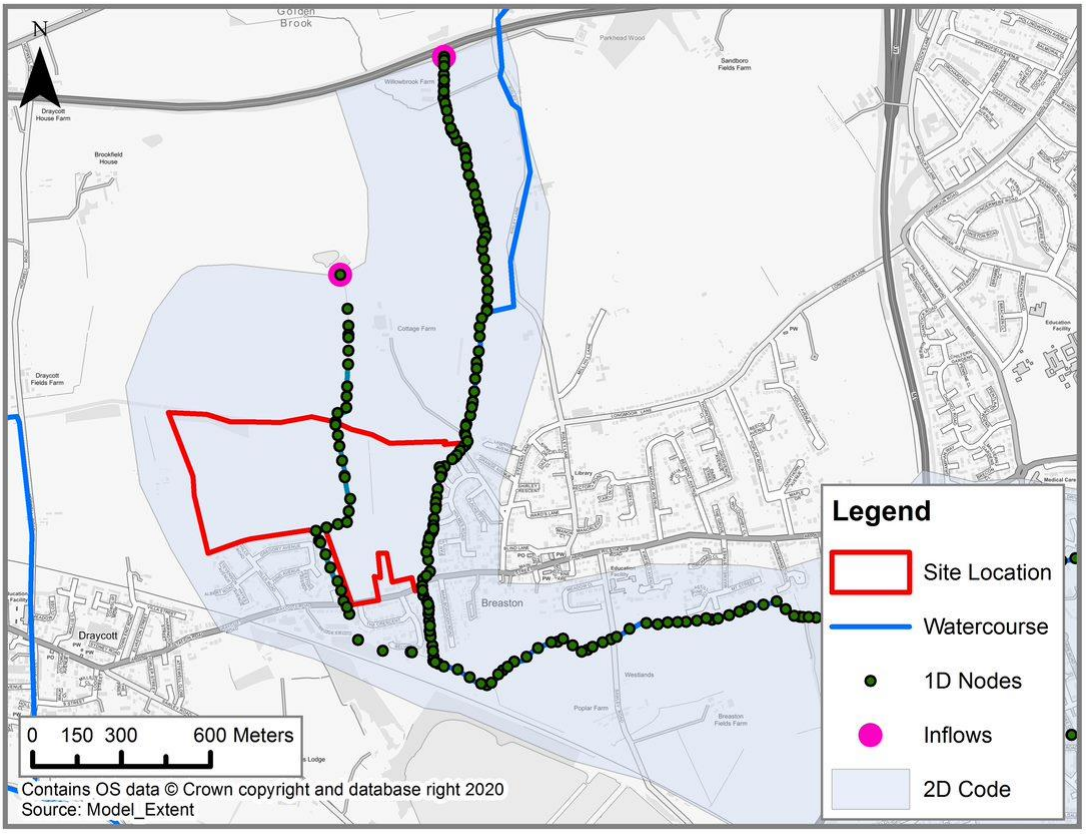


Figure 2-1 shows that site topographic data and LiDAR DTM data corelate relatively well, with differences in elevation of less than 0.2m for the majority of the site. The key differences occur in areas with trees where the LiDAR filtering process shows its limitation. As a result, topographic survey data was used in the model.

2.3 Model Extent

The hydraulic model represents the River Erewash and surrounding tributaries. Figure 2-2 shows the model extent for the Golden Brook and Golden Stream running throughout the site.

Figure 2-2: Model Extent



2.4 Modelling Approach

The River Erewash hydraulic model was ran using FLOOD MODELLER – TUFLOW (2018-03-AE-ISP-W64) to refine the flood outlines within the site boundary and assess potential safe access and egress issues that me affect the development potential of the site.

In addition, the baseline model was upgraded with the following changes:

- Inclusion of an acsii grid generated from topographic survey information collected by NJC Surveys Ltd in May 2020 in order to enhance the representation of ground levels within the site boundary;
- Inclusion of 1m LiDAR data across the entire model domain;
- Updated flow estimations were inputted into the model for the Golden Brook and the Golden Stream running through the proposed development site.

Table 2-1 shows the files that were updated within the model.

Table 2-1: Updated files within the model

File Name	Changes made to file
Erew_v31-H_3.5hr_f100_B.TCF Erew_v31-H_3.5hr_f100yr30cc_B.TCF Erew_v31-H_3.5hr_f100yr50cc_B.TCF Erew_v31-H_3.5hr_f1000_B.TCF	The TCF's are a copy from version 27.1 – H with changes to the TGC. All file paths within the model have been updated to follow the new file structure.
Erew_v31.1-A.tgc: • lidar_1m_2017.asc • (Add site topo name)	The TGC has been updated with 1m LiDAR last flown in 2017. A site topographic survey has also been added to accurately represent ground levels within the site.
100YR_v31_3.5hr_HT.ied 100yr30cc_v31_3.5hr_HT.ied 100yr50cc_v31_3.5hr_HT.ied 1000YR_v31_3.5hr_HT.ied	The IED's have been updated using the new fluvial flow estimates produced by JBA Consulting in 2020 for the Golden Stream and the Golden Brook. The new hydrographs are fitted to the peak water level finalised in the hydrological assessment in Appendix B.
Erew_v31-H_3.5hr_f100.ief Erew_v31_H_3.5hr_f100yr30cc.ief Erew_v31_H_3.5hr_f100yr50cc.ief Erew_v31_H_3.5hr_f1000_B.ief	The IEF's contain all the new links to the model files and the locations where results will be outputted. Parameters and run times have been kept the same.

2.5 Climate Change

In line with the Environment Agency's guidance on climate change allowances, the impact of climate change was modelled by factorising the model inflows by 1.30 (100-year plus 30% climate change exceedance) and 1.50 (100-year plus 50% climate change exceedance). This relates the 'higher central' and 'upper end' allowances, respectively for the Humber river basin.

2.6 Model Runs

The following flood scenarios were simulated using the River Erewash hydraulic model:

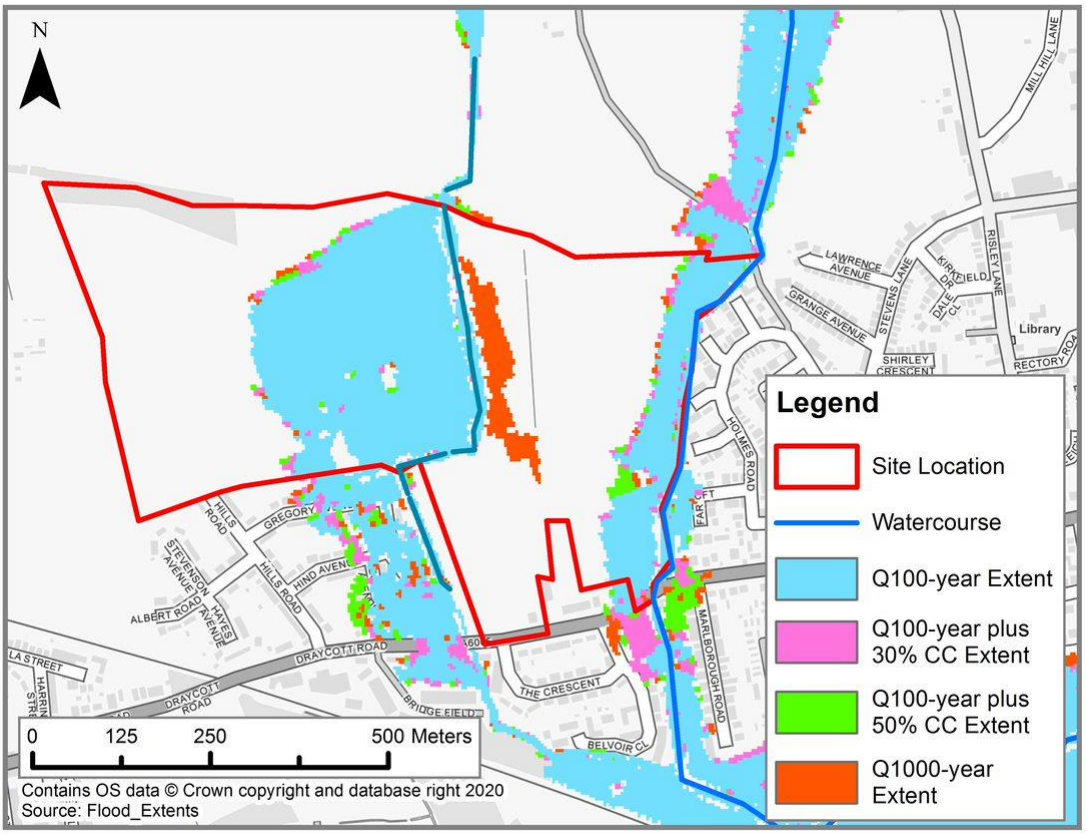
- [Base-line Scenario] – 100-year (1% AEP) flood event – existing condition
- [Base-line Scenario] – 100-year (+30%) (1% AEP) flood event – existing condition
- [Base-line Scenario] – 100-year (+50%) (1% AEP) flood event – existing condition
- [Base-line Scenario] – 1000-year (0.1% AEP) flood event – existing condition

3 Baseline Hydraulic Modelling

3.1 Extents

Figure 3-1 shows the baseline extents for all return periods run for the hydraulic modelling study, respectively.

Figure 3-1: Flood Extents



3.2 Comparison with the Environment Agency's Flood Map for Planning

Figure 3-2 and Figure 3-3 show the flood extents for the Golden Brook and Golden Stream compared to the Environment Agency's Flood Map for Planning, respectively.

Figure 3-2: 100-year vs Flood Zone 3

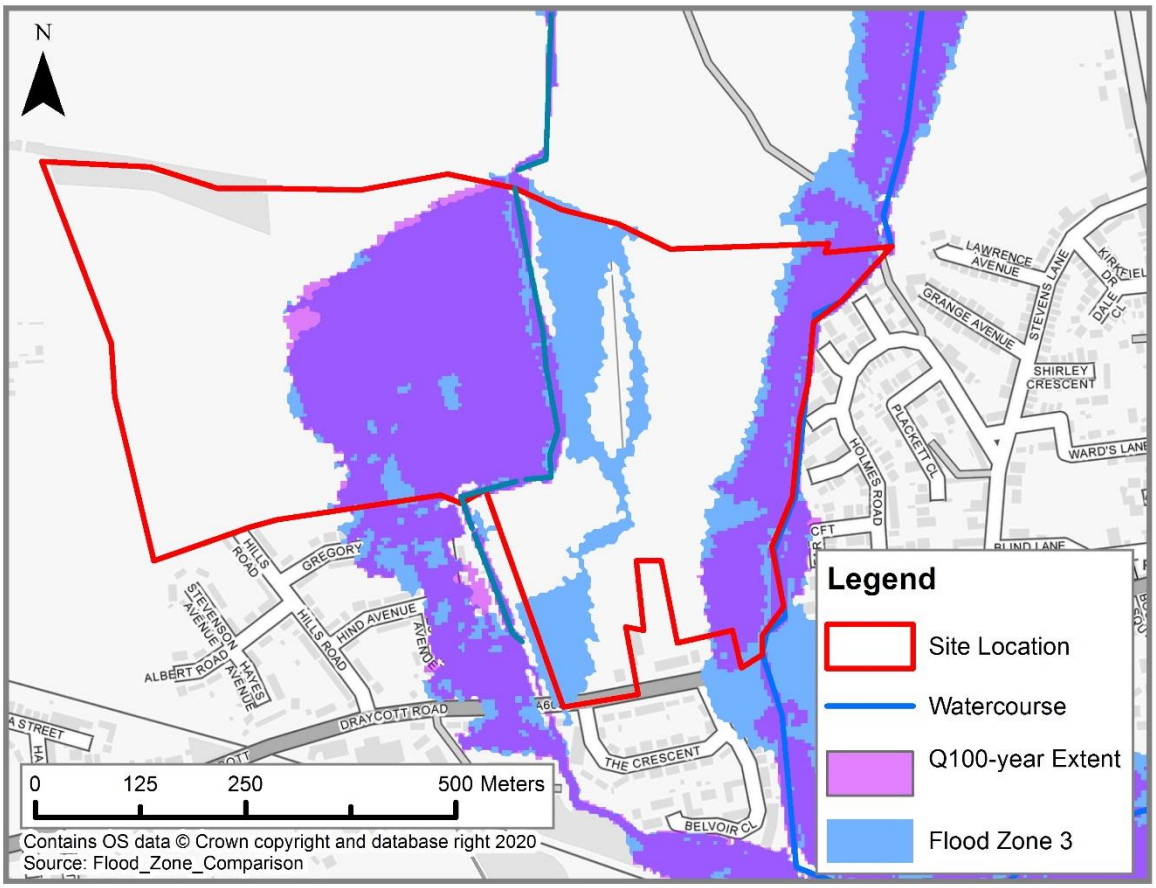


Figure 3-3: 1000-year vs Flood Zone 2

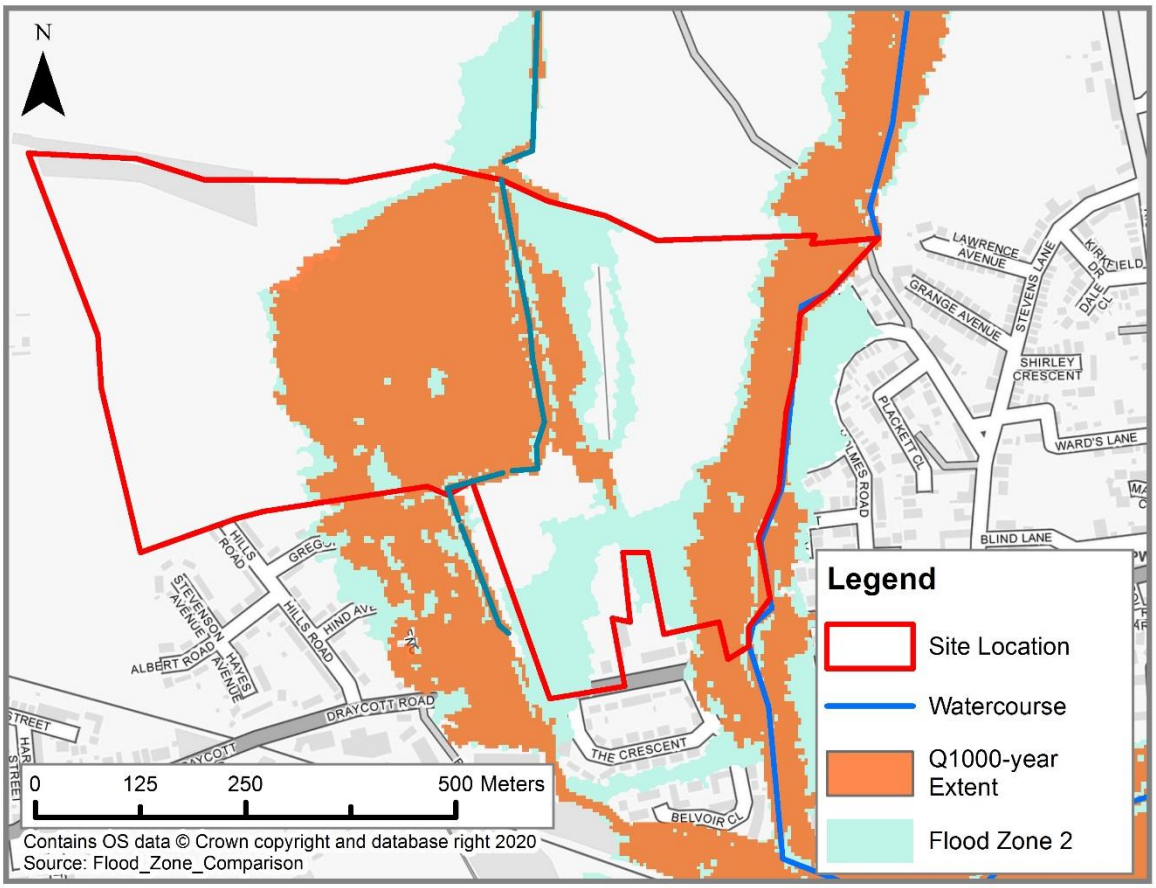


Figure 3-2 and Figure 3-3 show that there has been a decrease in flood risk towards the centre of the site when comparing Flood Zone 2 and 3 with the detailed modelling results. The Environment Agency's Flood Map for Planning are therefore deemed to be conservative when assessing fluvial flood risk in relation to the site. As the 2020 updated hydraulic model is more accurate, results from this model were used to review fluvial flood risk and safe access and egress arrangements across the site.

3.3 Flood Depths

Figure 3-4 to Figure 3-7 show the flood depths during the 100-year, 100-year plus 30% climate change, 100-year plus 50% climate change and 1,000-year fluvial flood events, respectively.

Figure 3-4: 100-year Depths

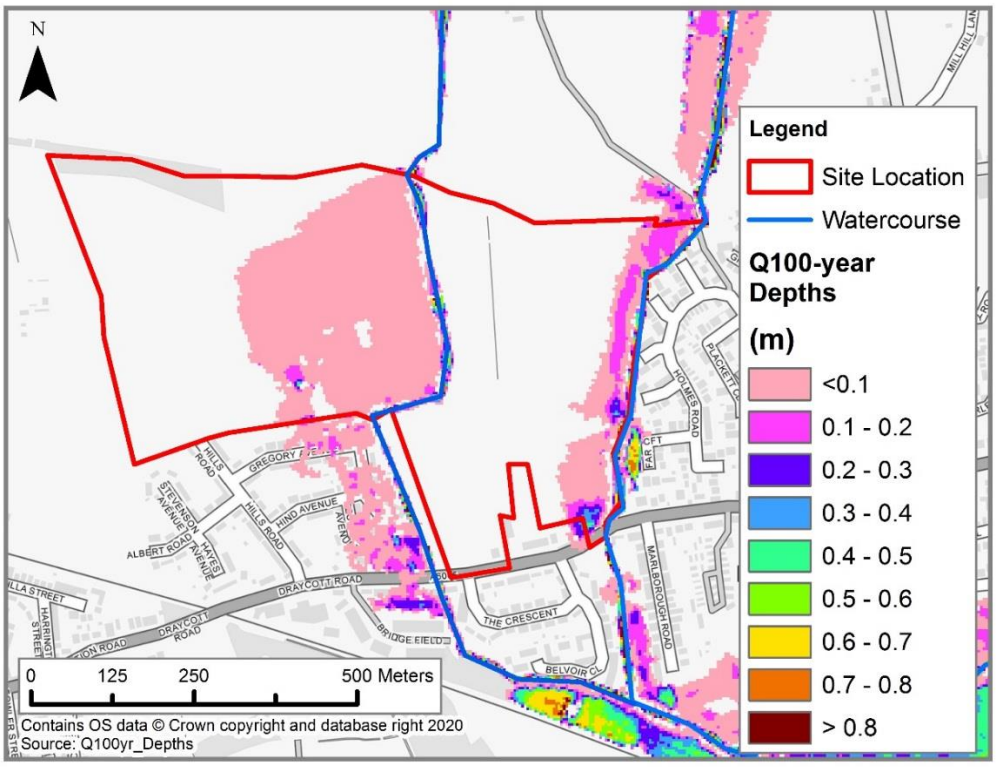


Figure 3-5: 100-year plus 30% Climate Change Depths

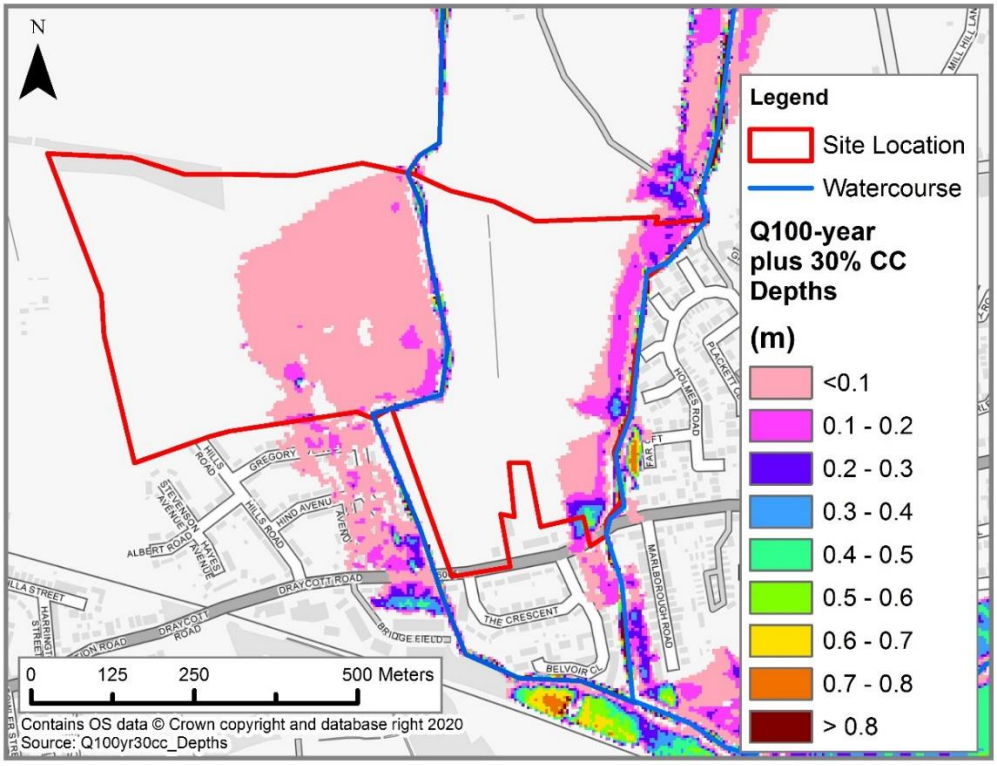


Figure 3-6: 100-year plus 50% Climate Change Depths

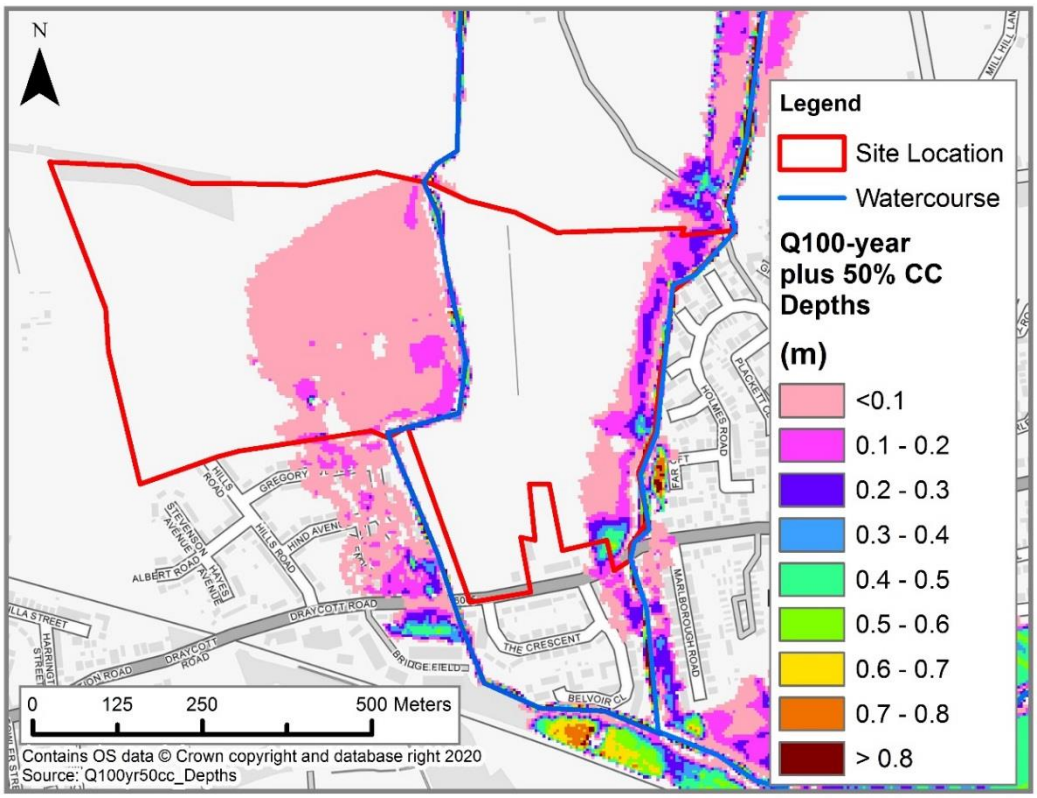


Figure 3-7: 1000-year Depths

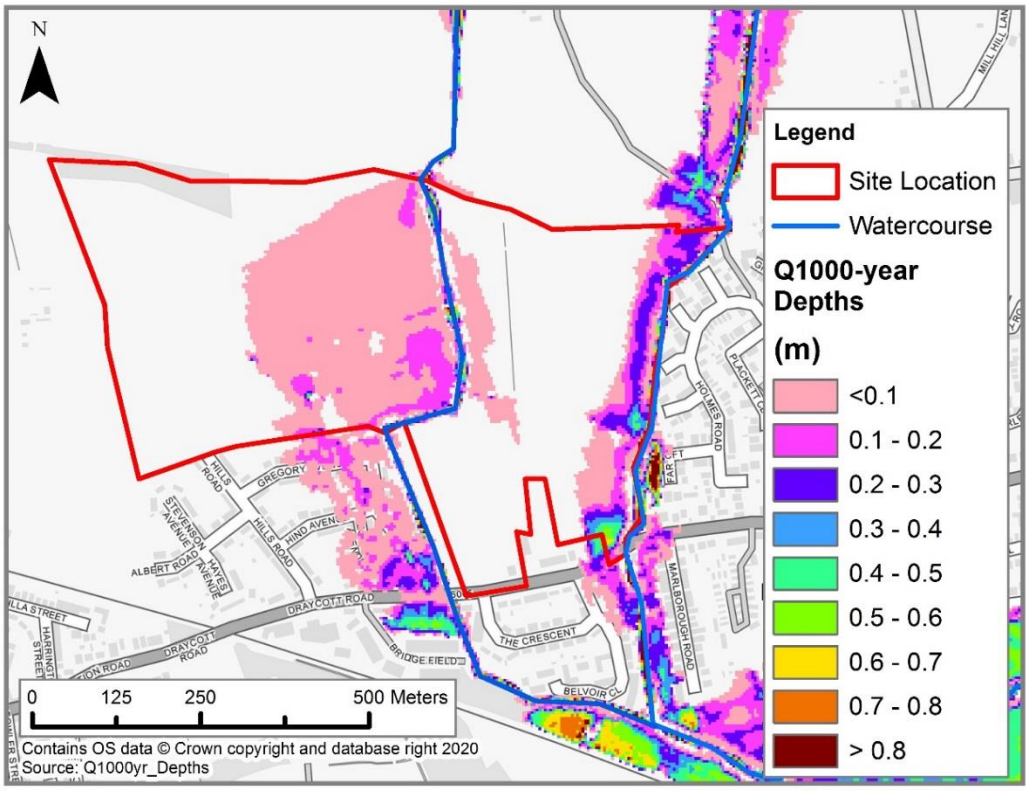


Figure 3-4 shows:

- Flooding occurs to the north-west of the development and towards the eastern site boundary during the 100-year fluvial flood event.
- During the 100-year fluvial flood event, depths of up to 0.48m (approximately) can be seen within the site boundary.

Figure 3-5 shows:

- Flooding occurs to the north-west of the development and towards the eastern site boundary during the 100-year plus 30% climate change fluvial flood event.
- During the 100-year plus 30% climate change fluvial flood event, depths of up to 0.56m (approximately) can be seen within the site boundary.

Figure 3-6 shows:

- Flooding occurs to the north-west of the development and towards the eastern site boundary during the 100-year plus 50% climate change fluvial flood event.
- During the 100-year plus 50% climate change fluvial flood event, depths of up to 0.61m (approximately) can be seen within the site boundary.

Figure 3-7 shows:

- Flooding starts to occur between the Golden Brook and Golden Stream during the 1000-year fluvial flood event.
- During the 1000-year fluvial flood event, depths of up to 0.65m (approximately) can be seen within the site boundary.

3.4 Flood Levels

Figure 3-8 to Figure 3-11 show the flood levels during the 100-year, 100-year plus 30% climate change, 100-year plus 50% climate change and 1,000-year fluvial flood events, respectively.

Figure 3-8: 100-year Flood Levels

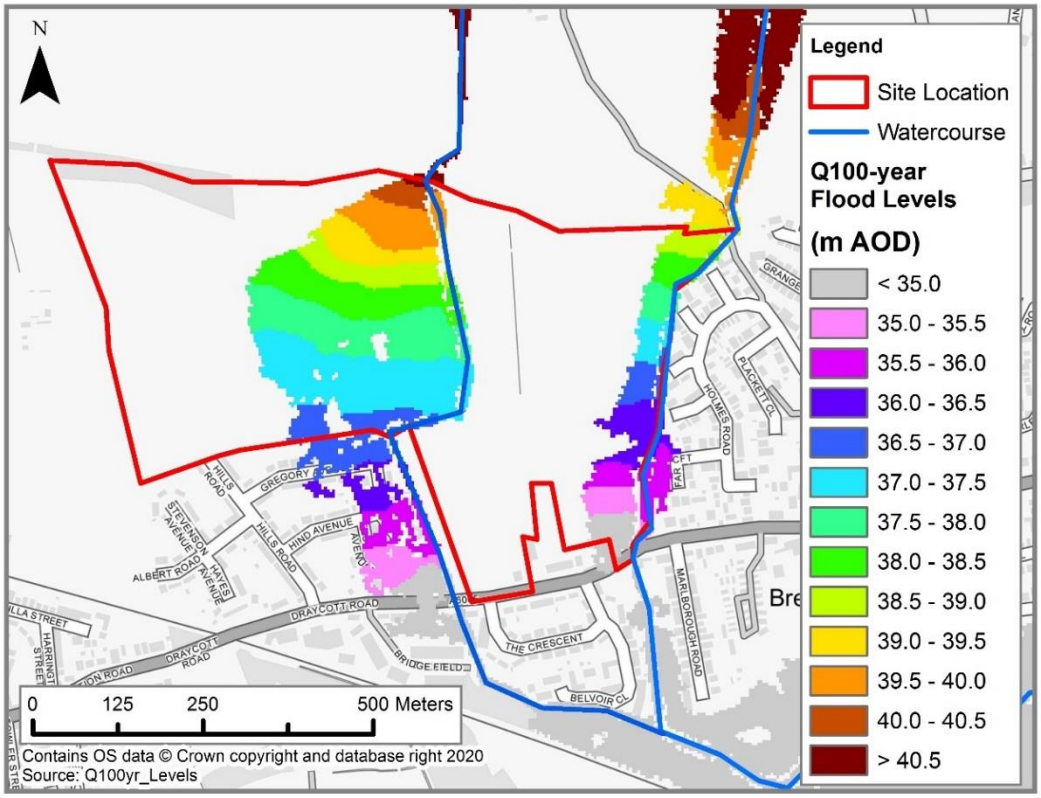


Figure 3-9: 100-year plus 30% Climate Change Flood Levels

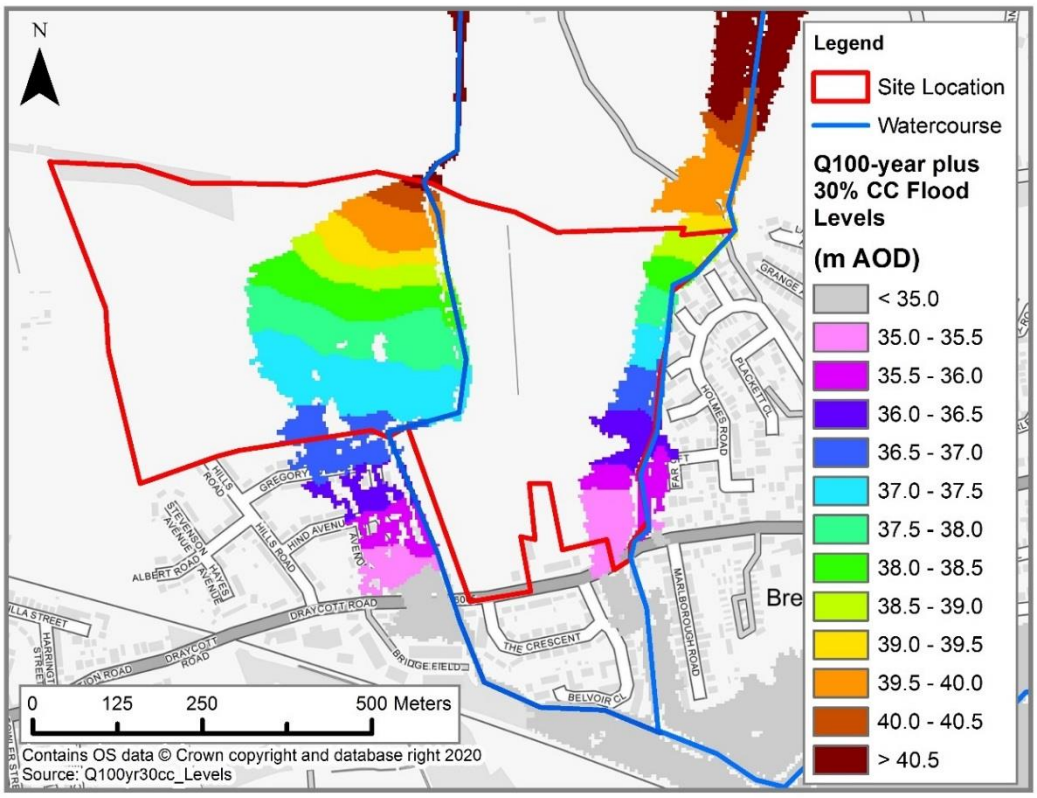


Figure 3-10: 100-year plus 50% climate change Flood Levels

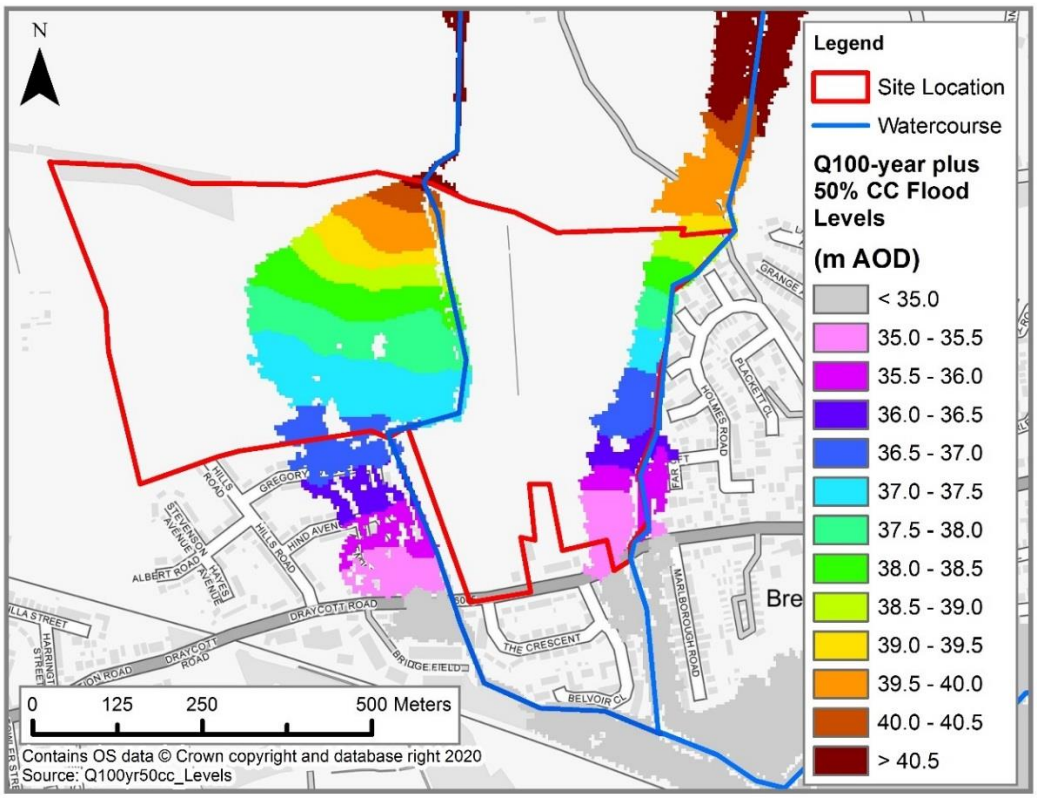


Figure 3-11: 1,000-year Flood Levels

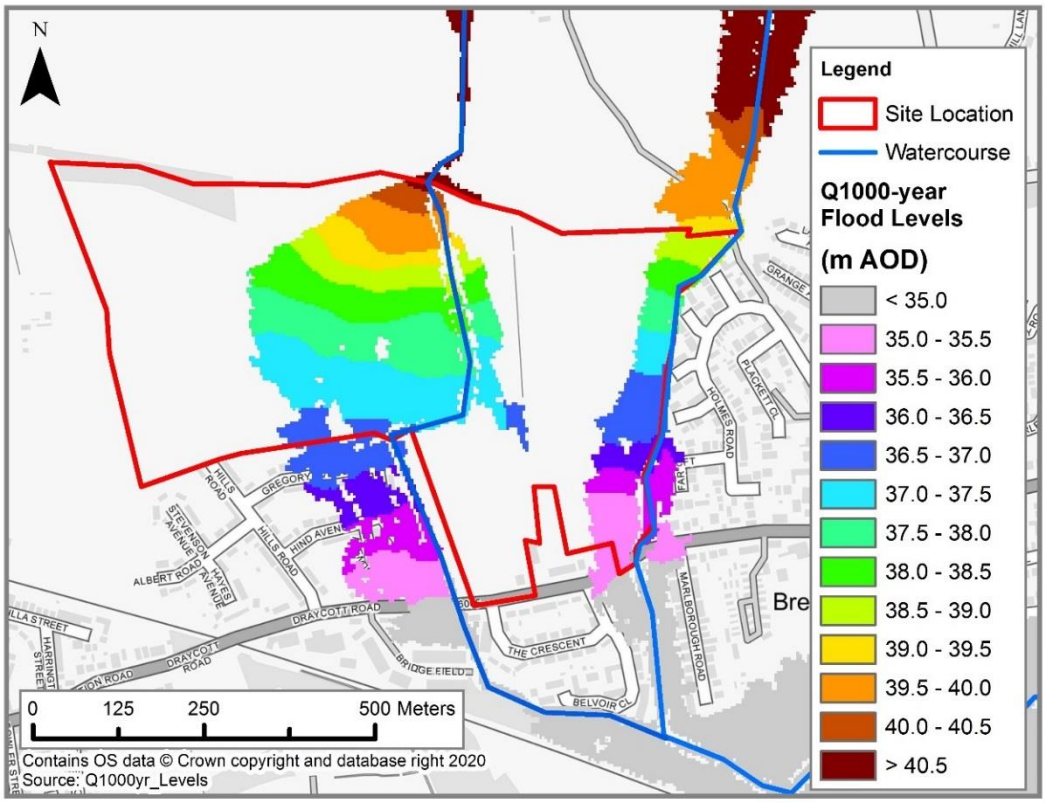


Figure 3-8 shows:

- During the 100-year fluvial flood event, flood levels up to 40.82m AOD (approximately) can be seen within the site boundary.

Figure 3-9 shows:

- During the 100-year plus 30% climate change fluvial flood event, flood levels up to 40.84m AOD (approximately) can be seen within the site boundary.

Figure 3-10 shows:

- During the 100-year plus 50% climate change fluvial flood event, flood levels up to 40.86m AOD (approximately) can be seen within the site boundary.

Figure 3-11 shows:

- During the 1000-year fluvial flood event, flood levels up to 40.88m AOD (approximately) can be seen within the site boundary.

3.5 Hazard-to-people

Figure 3-12 shows the hazard-to-people rating during the 100-year plus 30% climate change fluvial flood event, respectively.

Figure 3-12: Hazard-to-people

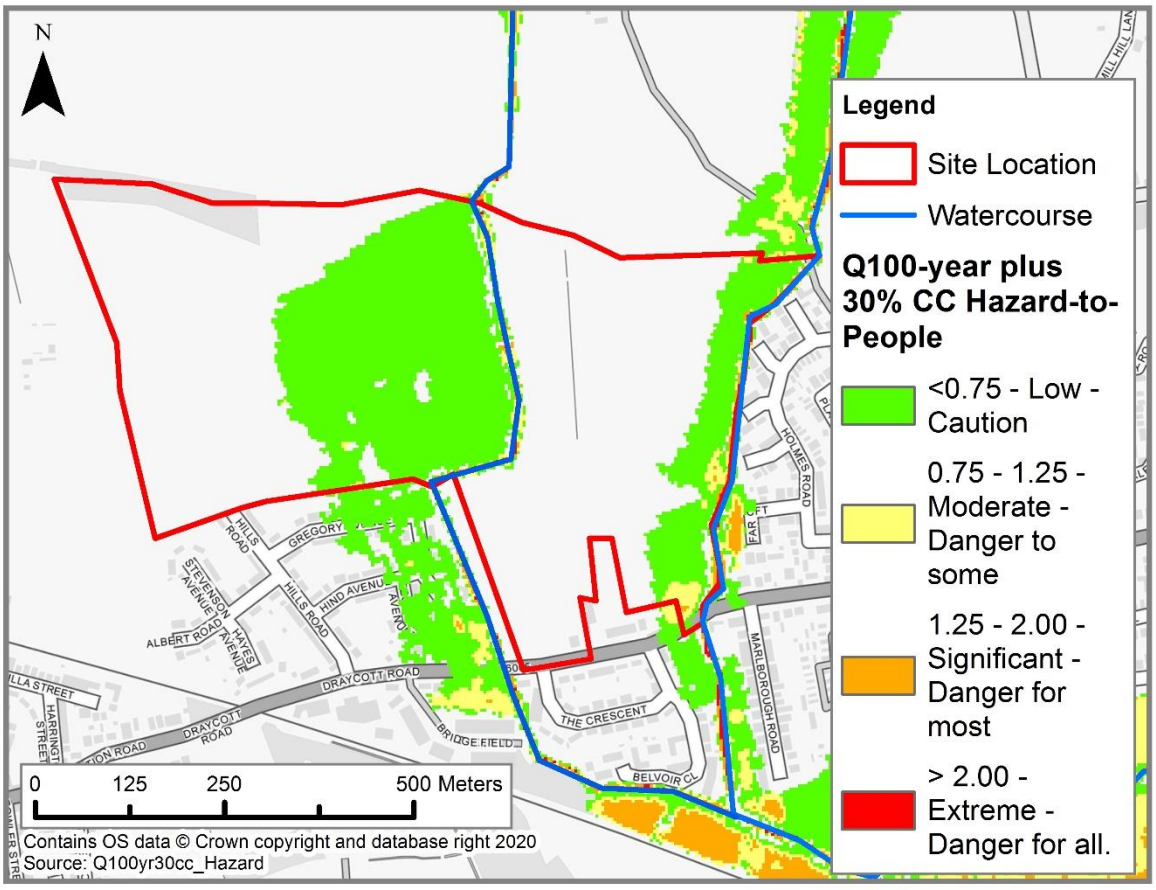


Figure 3-12 shows:

- Safe access and egress to and from the site was reviewed to see if flooding would affect the proposed vehicular entrance to the site and access to the central part of the site (i.e. between the two watercourses). The entrance will be located off Draycott Road, opposite The Crescent.

- With the exception of river channels, the hazard to people rating will remain low across the whole of the site during the 100-year plus 30% climate change fluvial flood event. This implies that safe access and egress to/from the central part of the site, albeit wet, is available. The 100-year plus 30% climate change hazard to people is also low along Draycott Road thus again implying that safe access and egress to /from the site, albeit wet, is available.

4 Conclusions and Recommendations

4.1 Conclusion

JBA Consulting was commissioned by Peveril Homes in April 2020 to refine the fluvial flood outlines in relation to their proposed development site at Draycott Road, Breaston. The site is crossed by the Golden Stream and the Golden Brook and, according to the Environment Agency's Flood Map for Planning, the access to the area located between these two watercourses is flooded.

A copy of the River Erewash FLOOD MODELLER – TUFLOW hydraulic model (representing both watercourses) was obtained from the Environment Agency (EA) for use in this study (EA ref: EMD-163779). The model was built in 2013 by Edenvale Young Associates.

The model was updated with new fluvial flow estimates for the Golden Brook and Golden Stream (revised using 2020 hydrological methods), site-specific topographic survey data and 1m LiDAR flown over in 2017.

The hydraulic modelling was re-run for the 100-year, 100-year plus 30% climate change, 100-year plus 50% climate change and 1,000-year fluvial flood events. Model results show:

- Flooding occurs to the north-west of the development and towards the eastern site boundary during all fluvial flood events.
- During the 100-year fluvial flood event, depths of up to 0.48m (approximately) can be seen within the site boundary.
- During the 100-year fluvial flood event, flood levels up to 40.82m AOD (approximately) can be seen within the site boundary.
- During the 100-year plus 30% climate change fluvial flood event, depths of up to 0.56m (approximately) can be seen within the site boundary.
- During the 100-year plus 30% climate change fluvial flood event, flood levels up to 40.84m AOD (approximately) can be seen within the site boundary.
- During the 100-year plus 50% climate change fluvial flood event, depths of up to 0.61m (approximately) can be seen within the site boundary.
- During the 100-year plus 50% climate change fluvial flood event, flood levels up to 40.86m AOD (approximately) can be seen within the site boundary.
- During the 1000-year fluvial flood event, depths of up to 0.65m (approximately) can be seen within the site boundary.
- During the 1000-year fluvial flood event, flood levels up to 40.88m AOD (approximately) can be seen within the site boundary.

Safe access and egress to and from the site was reviewed to see if flooding would affect the proposed vehicular entrance to the site and access to the central part of the site (i.e. between the two watercourses). The entrance will be located off Draycott Road, opposite The Crescent.

With the exception of river channels, the hazard to people rating will remain low across the whole of the site during the 100-year plus 30% climate change fluvial flood event. This implies that safe access and egress to/from the central part of the site, albeit wet, is available. The 100-year plus 30% climate change hazard to people is also low along Draycott Road thus again implying that safe access and egress to /from the site, albeit wet, is available.

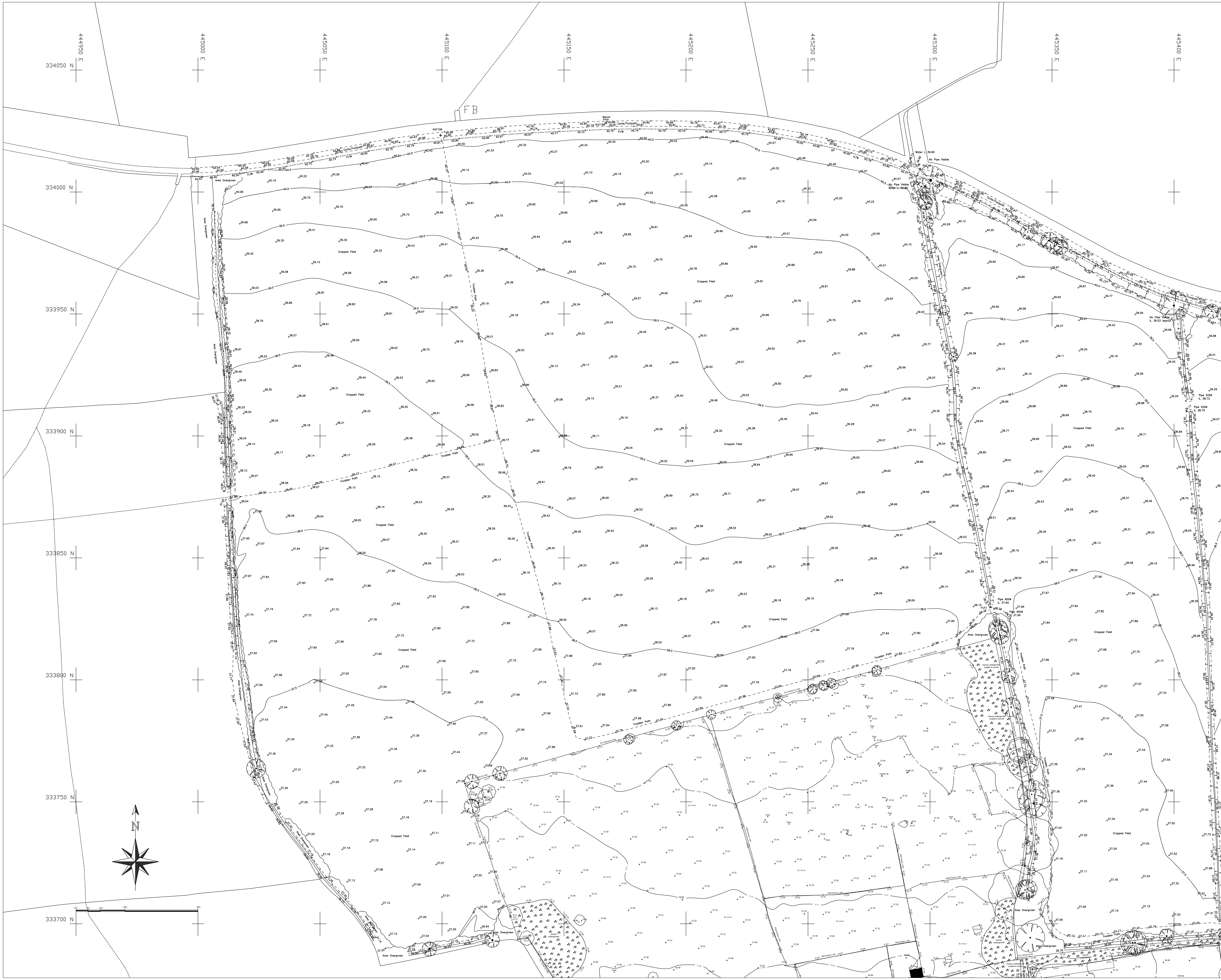
4.2 Recommendations:

It is recommended that the results from this modelling study are taken into consideration in the Flood Risk Assessment when confirming:

- safe access routes
- the recommended minimum Finished Floor Levels for the proposed units
- the requirement for floodplain compensation
- the design of bridges/culverts crossing the watercourses.

Appendices

A Topographic Survey



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FL — Flood Light
FFL — Floor Level
FS — Flag staff
GP — Gate Post
GU — Gully
GV — Gas Valve
IL — Invert Level
IC — Inspection Cover
KO — Kerb Outlet
LB — Litter Bin
LP — Lamp Post
MH — Square Manhole
MH — Circular Manhole
MH — Triangular Manhole
Mkr — Marker Post
MP — Mile Post
PB — Pillar Box
Pipe — Pipe
PM — Parking Meter
PO — Post
RE — Rodding Eye
RL — Ridge Level
RP — Reflector Post
RS — Road Sign
SNP — Name Plate
SI — Sign
Stay — Utility Stay
ST — Stop Tap
STN — Survey Control
SU — Stump
SV — Stop Valve
TC — Telecommunication
TCB — Tel. Control Box
TL — Traffic Light
T/P — Trial Pit
TP — Telegraph Pole
TS — Traffic Signal Cover
TV — Cable Television
WO — Wash Out
WM — Water Meter
WT — Water Tap
VP — Vent Pipe

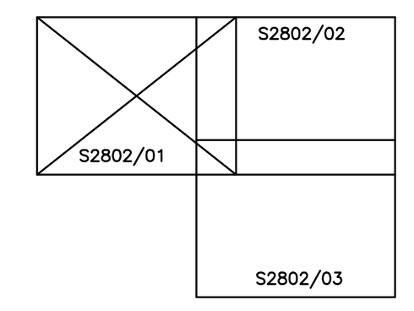
Fence Types & Abbreviations

C/P — Chestnut Paling
C/B — Close Boarded
C/L — Chain Link
Con/P — Concrete Panel
C/I — Corrugated Iron
CBr — Crash Barrier
Elc — Electric
H/M — Hit and Miss
Hrd — Hoarding
Iwn — Interwoven
I/R — Iron Railings
O/L — Overlap
Pal — Palisade
P/K — Picket (Wooden)
B/W — Post & Barbed Wire
P/C — Post & Chain
P/R — Post & Rail
P/W — Post & Wire
P/M — Post & Wire Mesh
T/R — Trip Rail

Feature Lines

Hedge
P/W Fence
Gate
Stile
Foliage/Tree Canopy
Dk Dropped Kerb Line
Kerb Line
Verge/Edge of Track or change of surface
Unkerbed Channel Line
Footpath
Wall Wall
R/Wall Retaining Wall
FW SW Sewer Lines
Overhead Electric Line
Overhead Telecom Line
60.35 Ground Level
Individual Tree
Individual Bush
Building Structure
Watercourse / Embankment etc

SHEET LAYOUT



SURVEY CONTROL

STN	EASTINGS	NORTHINGS	LEVEL
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FC1	445652.832	333599.000	36.382
FC2	445687.872	333613.271	37.164
FUT1	445324.861	333829.861	38.361
GH1	445147.491	333588.862	36.491
GH2	445219.807	333599.290	36.490
GH3	445304.286	333618.500	36.914
GH4	445404.421	333643.487	37.003
NJC1	445621.567	333478.132	34.914
NJC2	445507.607	333668.166	37.008
NJC2B	445604.002	333606.344	36.348
NJC2C	445564.312	333631.582	36.490
NJC8	445723.467	333831.085	38.461
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NJC16B	445167.219	334028.367	40.840
NJC17	445429.446	333950.653	40.688
NJC18	445534.384	333948.437	40.772
NJC19	445726.721	333945.664	39.355
NJC19A	445713.728	333956.256	39.131
NJC20AA	445718.549	333926.526	38.931
NJC20B	445717.839	333858.045	38.331
RB1	445775.097	333511.435	36.293
RB2	445579.456	333475.148	35.333
RB3	445631.155	333492.371	34.829
RB4	445526.204	333427.060	35.190
RB5	445770.423	333561.006	37.010
RB6	445728.516	333571.832	37.167

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homes to build a life in

Project Title

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Topographical Extension Survey

Drawn	Checked	Authorised
LD/RAB	SH	NJC
Date	**Scale**	**Sheet size**
13/05/2020	1/500	A0

Drg. No. S2802/01

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IL	Invert Level
IC	Inspection Cover
KO	Kerb Outlet
LB	Litter Bin
LP	Lamp Post
MH	Square Manhole
MH	Circular Manhole
MH	Triangular Manhole
Mkr	Marker Post
MP	Mile Post
PB	Pillar Box
Pipe	Pipe
PM	Parking Meter
PO	Post
RE	Rodding Eye
RL	Ridge Level
RP	Reflector Post
RS	Road Sign
SNP	Name Plate
SI	Sign
Stay	Utility Stay
ST	Stop Tap
STN	Survey Control
SU	Stump
SV	Stop Valve
TC	Telecommunication
TCB	Tel. Control Box
TL	Traffic Light
T/P	Trial Pit
TP	Telegraph Pole
TS	Traffic Signal Cover
TV	Cable Television
WO	Wash Out
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VP	Vent Pipe

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C/B	Close Boarded
C/L	Chain Link
Con/P	Concrete Panel
C/I	Corrugated Iron
CBr	Crash Barrier
Elc	Electric
H/M	Hit and Miss
Hrd	Hoarding
Iwn	Interwoven
I/R	Iron Railings
O/L	Overlap
Pal	Palisade
P/K	Picket (Wooden)
B/W	Post & Barbed Wire
P/C	Post & Chain
P/R	Post & Rail
P/W	Post & Wire
P/M	Post & Wire Mesh
T/R	Trip Rail

Feature Lines

Hedge
Fence (P/W)
Gate
Stile
Foliage/Tree Canopy
Dropped Kerb Line (Dk)
Kerb Line
Verge/Edge of Track or change of surface
Unkerbed Channel Line
Footpath
Wall (Wall)
Retaining Wall (R/Wall)
Sewer Lines (FW, SW)
Overhead Electric Line
Overhead Telecom Line
60.35 Ground Level
Individual Tree
Individual Bush
Building Structure
Watercourse / Embankment etc

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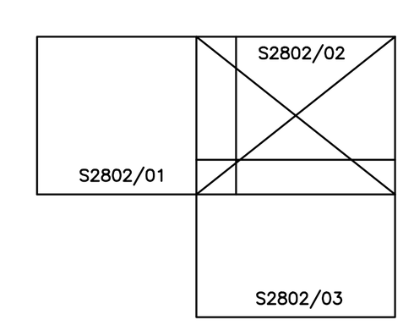

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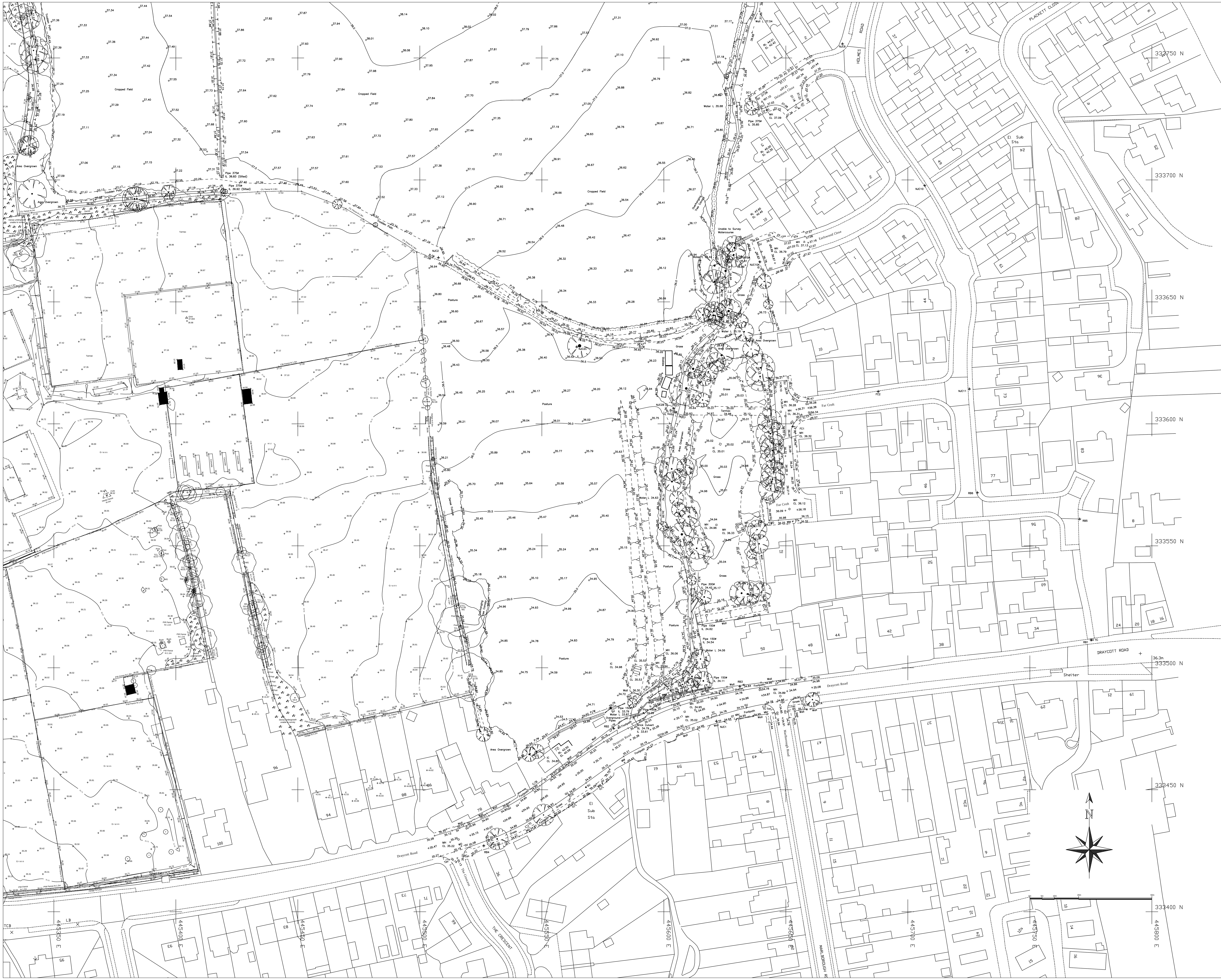

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- FS — Flag staff
- GP — Gate Post
- GU — Gully
- GV — Gas Valve
- IL — Invert Level
- IC — Inspection Cover
- KO — Kerb Outlet
- LB — Litter Bin
- LP — Lamp Post
- MH — Square Manhole
- MH — Circular Manhole
- MH — Triangular Manhole
- Mkr — Marker Post
- MP — Mile Post
- PB — Pillar Box
- Pipe — Pipe
- PM — Parking Meter
- PO — Post
- RE — Rodding Eye
- RL — Ridge Level
- RP — Reflector Post
- RS — Road Sign
- SNP — Name Plate
- SI — Sign
- Stay — Utility Stay
- ST — Stop Tap
- STN — Survey Control
- SU — Stump
- SV — Stop Valve
- TC — Telecommunication
- TCB — Tel. Control Box
- TL — Traffic Light
- T/P — Trial Pit
- TP — Telegraph Pole
- TS — Traffic Signal Cover
- TV — Cable Television
- WO — Wash Out
- WM — Water Meter
- WT — Water Tap
- VP — Vent Pipe

Fence Types & Abbreviations

- C/P — Chestnut Paling
- C/B — Close Boarded
- C/L — Chain Link
- Con/P — Concrete Panel
- C/I — Corrugated Iron
- CBr — Crash Barrier
- Elc — Electric
- H/M — Hit and Miss
- Hrd — Hoarding
- Iwn — Interwoven
- I/R — Iron Railings
- O/L — Overlap
- Pal — Palisade
- P/K — Picket (Wooden)
- B/W — Post & Barbed Wire
- P/C — Post & Chain
- P/R — Post & Rail
- P/W — Post & Wire
- P/M — Post & Wire Mesh
- T/R — Trip Rail

Feature Lines

- Hedge
- P/W Fence
- Gate
- Stile
- Foliage/Tree Canopy
- Dk Dropped Kerb Line
- Kerb Line
- Verge/Edge of Track or change of surface
- Unkerbed Channel Line
- Footpath
- Wall Wall
- R/Wall Retaining Wall
- FW SW Sewer Lines
- Overhead Electric Line
- Overhead Telecom Line
- 60.35 Ground Level
- Individual Tree
- Individual Bush
- Building Structure
- Watercourse / Embankment etc

SHEET LAYOUT

S2802/02
S2802/01
S2802/03

SURVEY CONTROL

STN	EASTINGS	NORTHINGS	LEVEL
DC1	445635.256	333733.172	37.163
FC1	445652.832	333599.000	36.382
FC2	445687.872	333613.271	37.164
FUT1	445324.861	333829.861	38.361
GH1	445147.491	333588.862	36.491
GH2	445219.807	333599.290	36.490
GH3	445304.286	333618.500	36.914
GH4	445404.421	333643.487	37.003
NJC1	445621.567	333478.132	34.914
NJC2	445507.607	333668.166	37.008
NJC2B	445604.002	333606.344	36.348
NJC2C	445564.312	333631.582	36.490
NJC8	445723.467	333831.085	38.461
NJC8A	445675.864	333803.398	37.909
NJC9	445673.220	333755.809	37.789
NJC10	445706.929	333697.732	37.801
NJC10A	445639.378	333666.450	36.949
NJC11	445725.235	333614.323	37.337
NJC12	445087.596	333587.823	36.779
NJC13	445021.664	333557.146	37.169
NJC14	444976.407	333578.614	37.326
NJC16	445295.984	334009.377	40.706
NJC16A	445099.417	334023.249	40.889
NJC16B	445167.219	334028.367	40.840
NJC17	445429.446	333950.653	40.688
NJC18	445534.384	333948.437	40.772
NJC19	445726.721	333945.664	39.355
NJC19A	445713.728	333956.256	39.131
NJC20AA	445718.549	333926.526	38.931
NJC20B	445717.839	333858.045	38.331
RB1	445775.097	333511.435	36.293
RB2	445579.456	333475.148	35.333
RB3	445631.155	333492.371	34.829
RB4	445526.204	333427.060	35.190
RB5	445770.423	333561.006	37.010
RB6	445728.516	333571.832	37.167

REV	DATE	DESCRIPTION	BY	APP.

njc SURVEYS LTD
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Dimensional Control ● Monitoring Surveys ● Ground Modelling ● Volumetric Calculations

Client

Peveril Homes
homes to build a life in

Project Title

Land off Draycott Road, Breaston

Drawing Title

Topographical Extension Survey

Drawn	Checked	Authorised
LD/RAB	SH	NJC
Date	**Scale**	**Sheet size**
13/05/2020	1/500	A0
Drg. No.		**Revision**
S2802/03		

B Hydrological Assessment

Flood estimation report: Breaston

Introduction

This report template is based on a supporting document to the Environment Agency's flood estimation guidelines. It provides a record of the hydrological context, the method statement, the calculations and decisions made during flood estimation and the results.

Contents

Approval

	Name and qualifications	Date
Method statement prepared by:	Bryony McLeod BSc MSc	08/04/2020
Method statement reviewed by:	Eva Kordomenidi Bsc MSc MCIWEM CWEM CSci	09/04/2020
Calculations prepared by:	Bryony McLeod BSc MSc	08/04/2020
Calculations reviewed by:	Eva Kordomenidi Bsc MSc MCIWEM CWEM CSci	09/04/2020

Revision History

Revision reference	Date issued	Amendments	Issued to

Abbreviations

AM	Annual Maximum
AREA	Catchment area (km^2)
BFI	Base Flow Index
BFIHOST	Base Flow Index derived using the HOST soil classification
CFMP	Catchment Flood Management Plan
CPRE	Council for the Protection of Rural England
FARL	FEH index of flood attenuation due to reservoirs and lakes
FEH	Flood Estimation Handbook
FSR	Flood Studies Report
HOST	Hydrology of Soil Types
NRFA	National River Flow Archive
POT	Peaks Over a Threshold
QMED	Median Annual Flood (with return period 2 years)
ReFH	Revitalised Flood Hydrograph method
SAAR	Standard Average Annual Rainfall (mm)
SPR	Standard percentage runoff
SPRHOST	Standard percentage runoff derived using the HOST soil classification
Tp(0)	Time to peak of the instantaneous unit hydrograph
URBAN	Flood Studies Report index of fractional urban extent
URBEXT1990	FEH index of fractional urban extent
URBEXT2000	Revised index of urban extent, measured differently from URBEXT1990
WINFAP-FEH	Windows Frequency Analysis Package – used for FEH statistical method

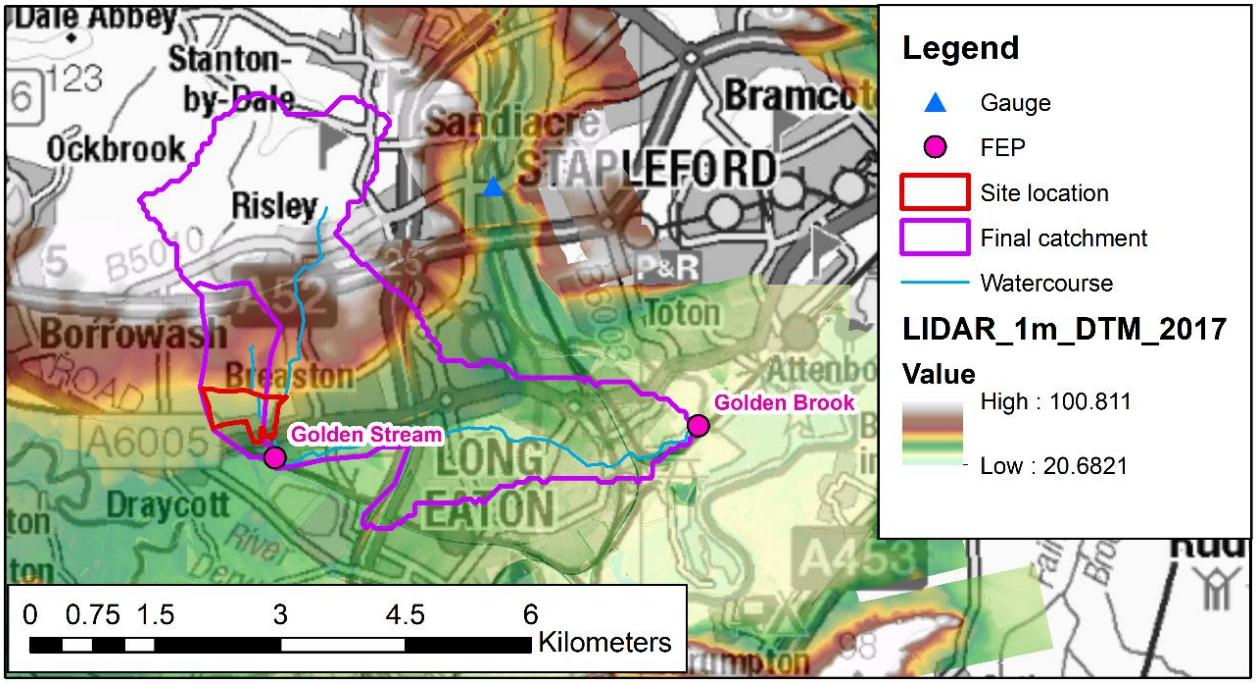
1 Method statement

1.1 Requirements for flood estimates

Overview • Purpose of study • Peak flows or hydrographs? • Range of return periods and locations	A section of an existing 2013 model[1] is being updated for the purpose of a flood risk assessment at a site on Draycott Road, Breaston. Two streams flow past the site of interest, Golden Brook and Golden Stream, these are tributaries to the River Erewash. Hydrograph inflows are required as inputs to the model at the upper end of each watercourse.

1.2 The catchment

Map



Description Include topography, climate, geology, soils, land use and any unusual features that may affect the flood hydrology.	The Golden Brook catchment is predominantly rural upstream of the site of interest. Downstream the area becomes more urbanised and contains a reservoir. The tributary watercourses are located on a clear hillside, which levels out below the site of interest. The A6005 and the M1 run through the catchment, which may affect distribution of surface runoff and/or affect transfer of runoff from one side of the catchment to the other.

1.3 Source of flood peak data

Source	NRFA peak flows dataset, Version 8, released September 2019. This contains data up to water year 2017-18.

[1] River Erewash Strategic Flood Risk Mapping Study for Environment Agency. Hyder Consulting, May 2013

1.4 Hydrological understanding of catchment

Outline the conceptual model	The main site of interest is in a currently rural location to the west of Breaston. Golden Stream runs through the middle of the site, and Golden Brook along the eastern edge of the site. The site can be subject to flooding from peak flow in the watercourses.
Any unusual catchment features to take into account?	No

1.5 Initial choice of approach

Is FEH appropriate? (it may not be for extremely heavily urbanised or complex catchments) If not, describe other methods to be used.	FEH is appropriate for this location.
Initial choice of method(s) and reasons How will hydrograph shapes be derived if needed? Will the catchment be split into sub-catchments? If so, how?	Both the FEH Statistical method and ReFH2 will be used for the site, and the most appropriate will be decided based on the estimates. The flows will be derived for the downstream end of each catchment following the methodology from the previous 2013 study.
Software to be used (with version numbers)	FEH Web Service[2] / WINFAP v4[3] / ReFH2.3

[2] CEH 2015. The Flood Estimation Handbook (FEH) Online Service, Centre for Ecology & Hydrology, Wallingford, Oxon, UK.

[3] WINFAP-FEH v4 © Wallingford HydroSolutions Limited 2016.

2 Locations where flood estimates required

The table below lists the locations of subject sites. The site codes listed below are used in all subsequent tables to save space.

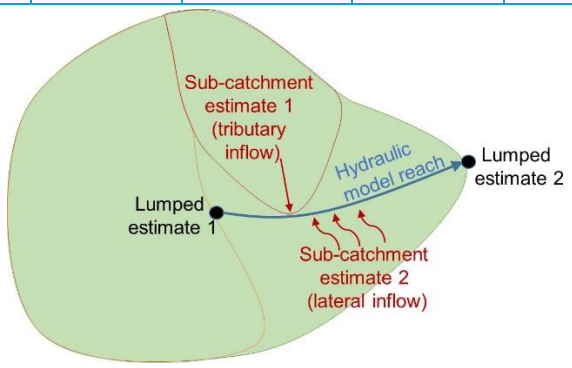
2.1 Summary of subject sites

Site code	Type of estimate L: lumped catchment S: Sub-catchment	Watercourse	Name or description of site	Easting	Northing	AREA on FEH CD-ROM (km^2)	Revised AREA if altered
GB	L	Golden Brook		450650	333600	15.36	12.88
GS	L	Golden Stream		445650	333200	N/A	1.47

Note: Lumped catchments (L) are complete catchments draining to points at which design flows are required.

Sub-catchments (S) are catchments or intervening areas that are being used as inputs to a semi-distributed model of the river system. There is no need to report any design flows for sub-catchments, as they are not relevant: the relevant result is the hydrograph that the sub-catchment is expected to contribute to a design flood event at a point further downstream in the river system. This will be recorded within the hydraulic model output files. However, catchment descriptors and ReFH model parameters should be recorded for sub-catchments so that the results can be reproduced.

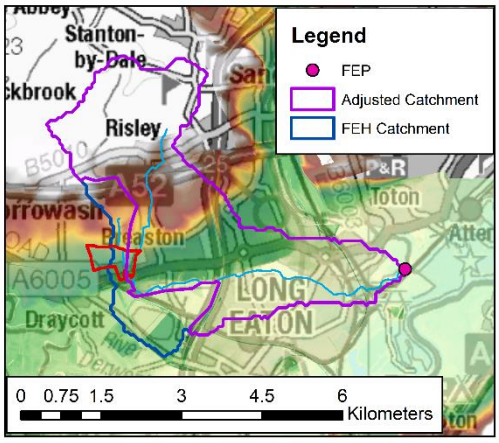
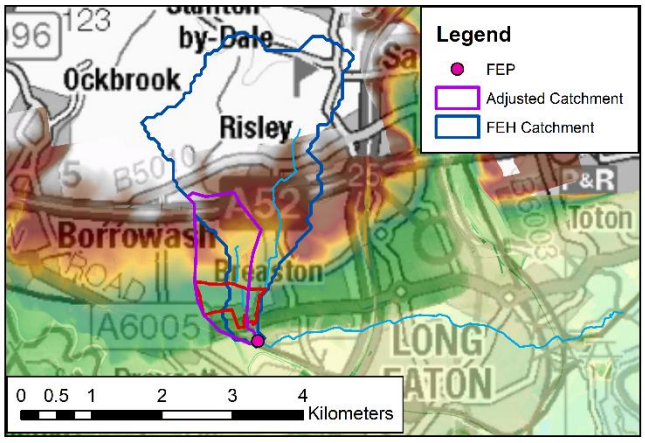
The schematic diagram illustrates the distinction between lumped and sub-catchment estimates.



2.2 Important catchment descriptors at each subject site (incorporating any changes made)

Site code	FARL	PROPWET	BFIHOST	DPLBAR (km)	DPSBAR (m/km)	SAAR (mm)	URBEXT 2000	FPEXT
GB	**1.00**	0.35	0.529	**5.32**	25.4	640	**0.234**	0.280
GS	1.00	0.35	0.441	**0.77**	47.0	660	**0.044**	0.107

2.3 Checking catchment descriptors

Record how catchment boundary was checked and describe any changes	The Golden Stream is not picked up as a catchment on the FEH web service. The catchment at the downstream end of the watercourse at the confluence with the Golden Brook was downloaded as this is hydro climatologically similar to the Golden Stream catchment, and descriptors were adjusted as described below. The catchment boundary was decided based on 1m Lidar. For the Golden Brook the catchment boundary was checked against 1m Lidar, with the Golden Stream and Harrington Drain catchment areas removed as these are included separately. For upper part of the catchment there is no 1m or 2m Lidar so this was assumed to be correct.  
Record how other catchment descriptors were checked and describe any changes.	For the Golden Brook, due to the removal of the Harrington Drain catchment which drains away from Golden Brook and included the reservoir influence, FARL was altered to 1. For both catchments the DPLBAR was adjusted based on the catchment size adjustments by area weighting.
Source of URBEXT	URBEXT2000
Method for updating of URBEXT	CPRE formula from FEH Volume 4

3 Statistical method

3.1 Overview of estimation of QMED at each subject site

Site code	Initial QMED rural (m^3/s) (from catchment descriptors)	Final method	Data transfer			Urban adjust-ment factor (UAF)	Final QMED estimate (m^3/s)
			NRFA numbers for donor sites used (see 3.3)	Distance between centroids d_{ij} (km)	Moderated QMED adjustment factor, (A/B)[a]		
GB	1.65	DT	28055	23.275	1.007	1.313	2.32
GS	0.37	DT	28055	21.587	1.007	1.046	0.39
Are the values of QMED spatially consistent?			Yes				
Method used for urban adjustment for subject and donor sites			WINFAP v4[4]				
Parameters used for WINFAP v4 urban adjustment if applicable							
Impervious fraction for built-up areas, IF			Percentage runoff for impervious surfaces, PR_{imp}		Method for calculating fractional urban cover, URBAN		
0.3			70%		From updated URBEXT2000		

Notes

Methods: AM – Annual maxima; POT – Peaks over threshold; DT – Data transfer (with urban adjustment); CD – Catchment descriptors alone (with urban adjustment); BCW – Catchment descriptors and bankfull channel width (add details); LF – Low flow statistics (add details).

The QMED adjustment factor A/B for each donor site is given in Table 3.2. This is moderated using the power term, a, which is a function of the distance between the centroids of the subject catchment and the donor catchment. The final estimate of QMED is: $(A/B)^a \times QMED_{initial} \times UAF$

Important note on urban adjustment

The method used to adjust QMED for urbanisation published in Kjeldsen (2010)[5] in which PRUAF is calculated from BFIHOST is not correctly applied in WINFAP-FEH v3.0.003. Significant differences occur only on urban catchments that are highly permeable.

[4] Wallingford HydroSolutions (2016). WINFAP 4 Urban adjustment procedures.

[5] Kjeldsen, T. R. (2010). Modelling the impact of urbanization on flood frequency relationships in the UK. Hydrol. Res. **41**. 391-405.

3.2 Search for donor sites for QMED (if applicable)

Comment on potential donor sites Include a map if necessary. Note that donor catchments should usually be rural.	There are no high flow gauging stations or level only gauges on the reach of the Golden Brook. There are gauging stations suitable for use as QMED donors on surrounding watercourses. These are over 20km away based on catchment centroids. The following gaugings on the NRFA database were considered: • 28055: Ecclesbourne @ Duffield • 28008: Dove @ Rocester Weir • 28002: Blithe @ Hamstall Ridware • 28046: Dove @ Izaak Walton Donor sites 28008 and 28045 were discounted based on having high SAAR values, and 28002 was discounted based on distance from FEPs. Site 28055 was chosen as the only suitable donor based on proximity to site and catchment descriptors.

3.3 Donor sites chosen and QMED adjustment factors

NRFA no.	Reasons for choosing	Method (AM or POT)	Adjust-ment for climatic variation ?	QMED from flow data (A)	QMED from catchment descriptor s (B)	Adjust -ment ratio (A/B)
28055	Proximity to catchment centroid	AM	No	14.4	13.7	1.025

3.4 Derivation of pooling groups

Several subject sites may use the same pooling group.

Name of group	Site code from whose descriptor s group was derived	Subject site treated as gauged? (enhanced single site analysis)	Changes made to default pooling group, with reasons .	Weighted average L-moments, L-CV and L-skew, (before urban adjustment)
GB_pool	GB	No	Removed: • 73015, 72014: very high SAAR values as group was strongly heterogenous • 26802, 33032, 33054, 2773, 26003, 33029: highly permeable catchments	0.283, 0.164
Note: Pooling groups were derived using the procedures from Science Report SC050050 (2008).				

3.5 Derivation of flood growth curves at subject sites

Site code	Method (SS, P, ESS, J)	If P, ESS or J, name of pooling group (Error! Reference source not found.)	Distribution used and reason for choice	Note any urban adjustment or permeable adjustment	Parameters of distribution (location, scale and shape after adjustments)	Growth factor for 100-year return period
GB	P	GB_pool	Gen. logistic is the only suitable distribution	Urban adjustments applied	1.000, 0.250, -0.204	2.90
GS	P	GB_pool	Gen. logistic is the only suitable distribution	Urban adjustments applied	1.000, 0.284, -0.171	3.00

Notes

Methods: SS – Single site; P – Pooled; ESS – Enhanced single site; J – Joint analysis

A pooling group (or ESS analysis) derived at one gauge can be applied to estimate growth curves at a number of ungauged sites. Each site may have a different urban adjustment, and therefore different growth curve parameters.

Urban adjustments are all carried out using the method of Kjeldsen (2010).

Growth curves were derived using the procedures from Science Report SC050050 (2008).

3.6 Flood estimates from the statistical method

Site code	Flood peak (m^3/s) for the following return periods (in years)								
	2	5	10	20	50	75	100	200	1000
GB	2.32	3.24	3.92	4.66	5.76	6.31	6.73	7.84	11.10
GS	0.39	0.57	0.69	0.82	1.01	1.10	1.17	1.36	1.87

4 Revitalised flood hydrograph 2 (ReFH2) method

4.1 Catchment sub-divisions for ReFH2 model

Site code	Area (km^2)			
	Rural or un-developed	**Paved**	Only relevant if significant transfers of water via sewers crossing catchment boundaries…	
			Paved with sewers draining out of topographic catchment	**Paved outside topographic catchment with sewers draining into catchment**
GB	8.335	4.545	0	0
GS	1.373	0.097	0	0
Sources of information for creating sub-divisions	N/A		**Sewer capacity** (return period / rainfall intensity / flow rate) and source of information	0

In the absence of detailed information about sewer drainage in the catchment, a conservative assumption was applied that all sewers drain within the catchment.

4.2 Parameters for ReFH2 model

ReFH2.3 software has been used to calculate the inflows.

Site code	Method	Tp_{rural} (hours)	Tp_{urban} (hours)	C_{max} (mm)	PR_{imp} % runoff for impermeable surfaces	BL (hours)	BR
GB	CD	5.91	2.96	483.16	0.7	51.16	2.37
GS	CD	1.61	1.21	355.61	0.7	29.13	1.73
Brief description of any flood event analysis carried out (further details should be given in the annex)				The catchment is ungauged hence no flood event analysis was undertaken here.			
Methods: OPT: Optimisation, BR: Baseflow recession fitting, CD: Catchment descriptors, DT: Data transfer (give details)							

4.3 Design events for ReFH2 method: Lumped catchments

Site code	Urban or rural	Season of design event (summer or winter)	Storm duration (hours)
GB	Urban	Winter	9
GS	Urban	Winter	9

4.4 Flood estimates from the ReFH2 method

Site code	Flood peak (m^3/s) for the following return periods (in years)								
	2	5	10	20	50	75	100	200	1000
GB	2.24	2.95	3.52	4.20	5.42	6.10	6.61	7.96	11.33
GS	0.60	0.80	0.96	1.14	1.49	1.68	1.82	2.20	3.17

6 Discussion and summary of results

6.1 Comparison of results from different methods

This table compares peak flows from various methods with those from the FEH Statistical method at example sites for two key return periods. Blank cells indicate that results for a particular site were not calculated using that method.

Site code	Ratio of peak flow to FEH Statistical peak	
	Return period 2 years	Return period 100 years
	ReFH2	ReFH2
GB	1.03	1.04
GS	1.54	1.56

6.2 Final choice of method

Choice of method and reasons Include reference to type of study, nature of catchment and type of data available.	The catchments are ungauged and there is appreciable uncertainty associated with choosing any of the 2 methods. The ReFH2 method has been chosen as the final method for the inflows to err on the side of caution. For the larger catchment it produces larger peak flows than the FEH Statistical method, so is the more conservative choice for the final inflows. The larger catchment includes a degree of urbanisation therefore the ReFH2 is considered the most suitable approach as it includes an urban component that introduces three extra parameters to account for the effect of urbanisation to the runoff and time-to-Peak.
How will the flows be applied to a hydraulic model? If relevant. Will model inflows be adjusted to achieve a match with lumped flow estimates, or will the model be allowed to route inflows?	The flows will be applied directly to the 1D model as flow-time hydrographs at the upstream end of each watercourse.

6.3 Assumptions, limitations and uncertainty

List the main assumptions made (specific to this study)	No allowance for sewer capacity was given in the urban area potentially taking flow out of the topographic catchment, but this assumption is likely to give more conservative design flood flow estimates in this case.
Discuss any particular limitations, e.g. applying methods outside the range of catchment types or return periods for which they were developed.	The selection of flow estimation points are in line with the previous 2013 study so that design flow estimates remain suitable for application directly to the model. This means the downstream of each watercourse has been used to derive inflows for the upstream end so these are likely to be overestimating flows.
Give what information you can	There are no published methods for quantifying uncertainty

<table>
<tr><td>on uncertainty in the results, e.g. confidence limits from Kjeldsen (2014).</td><td>for the Urban ReFH2 method, apart from carrying out sensitivity tests on key model parameters.
Using QMED donor information from a neighbouring catchment, research from the FEH Local project suggests confidence bands (as a factor of the final peak flow) as follows:<table><tr><td rowspan="2">Confidence level</td><td colspan="2">One donor</td></tr><tr><td>68%</td><td>95%</td></tr><tr><td>5% AEP</td><td>0.60 – 1.66</td><td>0.36 – 2.76</td></tr><tr><td>1% AEP</td><td>0.58 – 1.72</td><td>0.34 – 2.94</td></tr><tr><td>0.1% AEP</td><td>0.54 – 1.86</td><td>0.29 – 3.45</td></tr></table>These are for moderately urbanised catchments (0.03 ≤ URBEXT< 0.15).</td></tr>
<tr><td>Comment on the suitability of the results for future studies, e.g. at nearby locations or for different purposes.</td><td>Flows would only be suitable for future studies if the proposed development in this flood risk assessment is not implemented, otherwise the URBEXT value would need to be updated for the downstream estimate. It would also be pertinent to check for any new methodologies suitable for very small or highly urban catchments.</td></tr>
<tr><td>Give any other comments on the study, e.g. suggestions for additional work.</td><td></td></tr>
</table>

6.4 Checks

Are the results consistent, for example at confluences?	Yes, flows increase with catchment size.
What do the results imply regarding the return periods of floods during the period of record?	The site is ungauged so there is no period of record.
What is the range of 100-year growth factors? Is this realistic?	The 100-year growth factor is 2.95. The typical range is 2.1 to 4.0 therefore the growth factor is within the typical range.
If 1000-year flows have been derived, what is the range of ratios for 1000-year flow over 100-year flow?	1.71
How do the results compare with those of other studies? Explain any differences and conclude which results should be preferred.	The previous study used a mixture of FEH Statistical and FEH rainfall-runoff methods. The FEH rainfall-runoff method was used for these inflow points and produced significantly larger results. The FEH Statistical methods compare similarly, for FEP GS the catchment area has changed from 2.2km^2 to 1.4km^2 and the flows have decreased accordingly. FEH rainfall runoff produced higher flows but this method is now obsolete and is known to often overestimate peak flows.
Are the results compatible with the longer-term flood history?	There is no longer term flood history provided.
Describe any other checks on the results	

6.5 Final results

Site code	Flood peak (m^3/s) for the following return periods (in years)								
	2	**5**	**10**	**20**	**50**	**75**	**100**	**200**	**1000**
GB	2.24	2.95	3.52	4.20	5.42	6.10	6.61	7.96	11.33
GS	0.60	0.80	0.96	1.14	1.49	1.68	1.82	2.20	3.17

If flood hydrographs are needed for the next stage of the study, where are they provided? (e.g. give filename of spreadsheet, hydraulic model, or reference to table below)	The flood hydrographs for the study are provided in the spreadsheet: ReFH2_hydrograph.xlsx

7 Annex

7.1 Pooling group

Station	Distance	Years of data	QMED AM	L-CV	L-SKEW	Discordancy	AREA	SAAR	FPEXT	FARL	URBEXT 2000
41020 (Bevern Stream @ Clappers Bridge)	2.757	49	13.66	0.203	0.181	1.162	35.48	886	0.076	0.993	0.013
34005 (Tud @ Costessey Park)	2.773	57	3.146	0.269	0.168	0.382	72.11	649	0.158	0.973	0.029
36010 (Bumpstead Brook @ Broad Green)	2.841	51	7.5	0.372	0.184	0.844	27.58	588	0.045	0.999	0.007
36003 (Box @ Polstead)	2.948	57	3.91	0.305	0.089	0.538	56.72	566	0.094	0.993	0.012
25019 (Leven @ Easby)	2.962	40	5.384	0.343	0.378	1.776	15.09	830	0.02	1	0.004
36004 (Chad Brook @ Long Melford)	3.07	51	5.186	0.294	0.182	0.602	50.33	589	0.065	1	0.006
36007 (Belchamp Brook @ Bardfield Bridge)	3.091	53	4.63	0.371	0.119	1.407	58.16	560	0.079	0.996	0.004
27051 (Crimple @ Burn Bridge)	3.098	46	4.539	0.219	0.148	1.211	8.17	855	0.013	1	0.006
37003 (Ter @ Crabbs Bridge)	3.123	53	5.43	0.269	-0.007	1.323	77.76	570	0.115	0.994	0.012
27010 (Hodge Beck @ Bransdale Weir)	3.18	41	9.42	0.224	0.293	1.029	18.82	987	0.009	1	0.001
53017 (Boyd @ Bitton)	3.181	45	13.87	0.241	0.088	0.725	47.58	807	0.05	0.998	0.016

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Appendix 5

Retained trees & vegetation

PRoW / national cycle route 6

Proposed pedestrian / cycle link

Proposed northern planting

Sports pitches

SuDS

Play space

Retained PRoW

Pedestrian / cycle link to Gregory Avenue

Pedestrian / cycle link to Hills Road

Potential site access

0 100 200m

WYG Group
creative minds safe hands

Revisions

REV	AMENDMENTS	BY	DATE
A	Changes to annotations	BR	14.04.20

Key

- Site boundary
- PRoW (Public Right of Way)
- Watercourse / field drain
- Residential parcel
- POS (public open space)
- SuDS (sustainable urban drainage system)*
- Primary road
- Secondary road
- Pedestrian / cycle link
- Existing & retained trees / vegetation
- Proposed trees

*Location subject to detailed modelling

North

Peveril Homes

Land off Draycott Road, Breaston

Indicative masterplan

DATE: 14.04.20 SCALE: 1:2500 @ A2

DRAWN BY / REVIEWED BY: BR / AC

PROJECT NO:	DRAWING NO:	REVISION:
A117331	03	B

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1. DO NOT SCALE FROM THIS DRAWING
2. THIS DRAWING IS TO BE CHECKED WITH ALL OTHER RELEVANT DRAWINGS.
3. ANY DISCREPANCIES CHECK WITH WYG, IF IN DOUBT ASK.
4. DRAWING TO BE USED FOR PURPOSES OF THE ISSUE AND NOTED ON PLAN