

8 STRATEGIC GREEN BELT REVIEW

Approach and Methodology

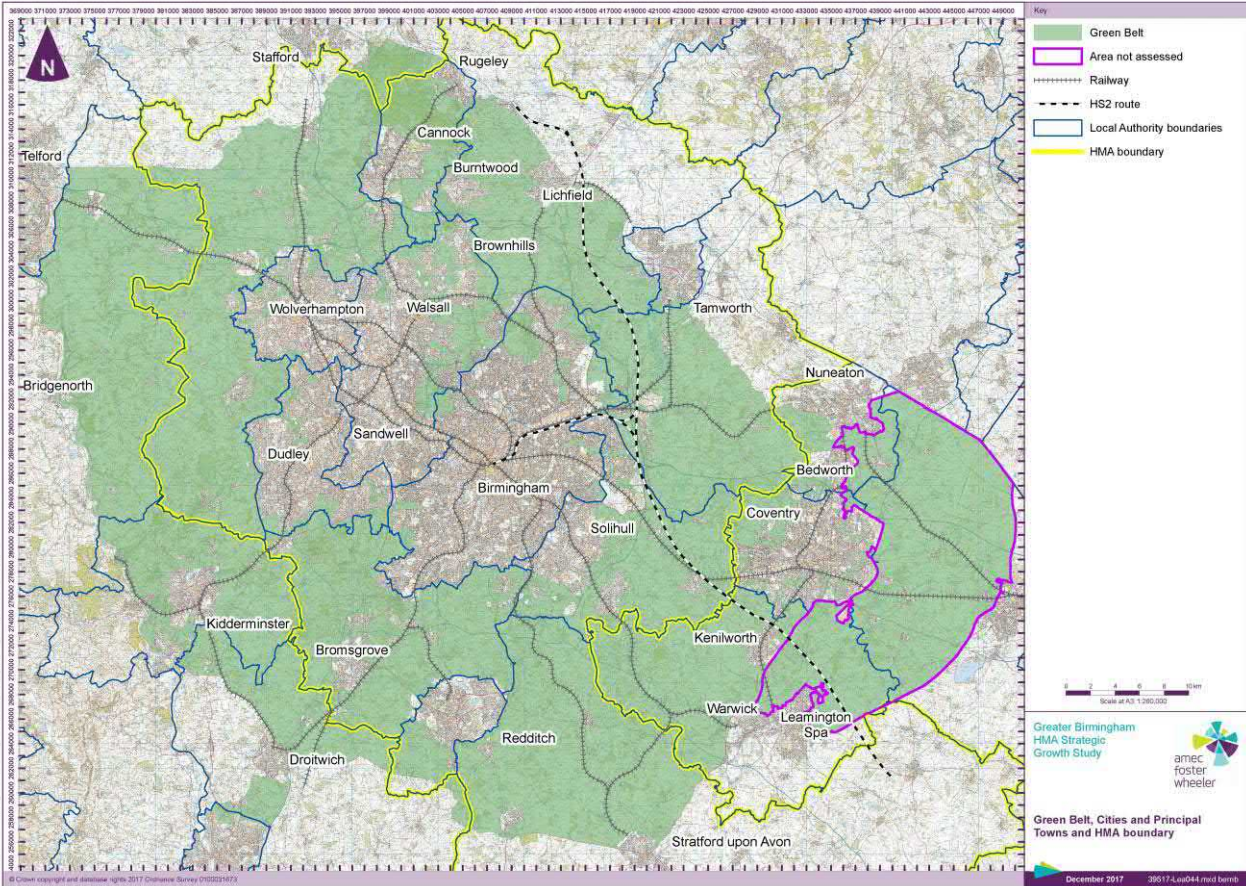
Background and Study Approach

- 8.1 In the context of seeking to address the shortfall in housing need across the HMA, this section moves on to present a strategic review of the Green Belt.
- 8.2 A significant proportion of the land in the HMA Area outside the built-up areas is covered by Green Belt policy, requiring the demonstration of Exceptional Circumstances through Local Plan Review for any alterations to be made to its extent.
- 8.3 The West Midlands Green Belt was created following the publication of Circular 42/55 which invited local planning authorities to consider the establishment of Green Belts in their development plans. As in other parts of the country, the designation of Green Belt was a reaction to the urban sprawl along transport corridors along with growing car ownership increasing the accessibility of rural areas. Land had already been bought by local authorities on the edge of the major urban areas to prevent further outward sprawl, when, in the early 1960s there were proposals for a Green Belt around the Birmingham conurbation.
- 8.4 Green Belt proposals were put forward as amendments to development plans but remained formally unapproved until 1975, when the Secretary of State approved the West Midlands Green Belt, although a quarter remained 'interim' and was only introduced in later reviews of structure and local plans. The West Midlands Green Belt covers approximately 900 square miles and extends between 6 and 15 miles from the built edge of the conurbation, surrounding and abutting a number of towns and cities: Kidderminster, Bromsgrove, Redditch, Cannock, Coventry, Lichfield, Tamworth, Rugby, Stratford upon Avon, Warwick/Leamington, Bridgnorth and Telford (Figure 24). A large number of villages and suburbs of varying sizes have been excluded from the Green Belt.
- 8.5 The approach to the Study is a high-level one³⁰, analysing the form and strategic function of the Green Belt against the purposes of Green Belt policy set out in the National Planning Policy Framework (NPPF) (Para 80), namely:
- to check the unrestricted sprawl of large built-up areas;
 - to prevent neighbouring towns merging into one another;
 - to assist in safeguarding the countryside from encroachment;
 - to preserve the setting and special character of historic towns; and
 - to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.

³⁰ See for example studies undertaken for Solihull, Stratford upon Avon, Warwick, North Warwickshire, Coventry, Tamworth, South Staffordshire, Lichfield and Cannock Chase.

8.6 The analysis is part of a wider process (see Methodology section below) to assist the HMA Authorities in determining where significant development could, in principle, be accommodated.

Figure 24: The West Midlands Green Belt and the Greater Birmingham HMA Boundary



Green Belt Assessment Methodology

Definition of the Scale of Analysis and Green Belt Functions

8.7 There is no prescribed methodology for the assessment of the form and function of Green Belts. However, practice has evolved which typically divides the Green Belt into parcels which are then described and their contribution to Green Belt function analysed against the purposes of Green Belt policy set out in the NPPF. In determining the fulfilment of Green Belt functions, some studies use a quantitative scoring and ranking approach, whilst others use a more qualitative approach to identify the relative contribution of Green Belt to its policy purposes. The latter is the approach followed in this study.

8.8 Using strong permanent boundaries which can be applied in a consistent fashion (Motorways/Trunk Roads, A-Roads and railways), some 120 parcels have defined across the Green Belt (Figure 25).

The alternative would be to seek strong boundaries from other physical features, but this approach invites inconsistent application and would, especially in the vicinity of urban areas, generate a large number of parcels which would make the analysis unwieldy. In addition, in the context of this study, this exercise could prompt speculation as to 'potential development parcels'. The parcels are used to help describe the character of the Green Belt, and are not used as the basis for assessing relative contribution to Green Belt purposes or used to determine development boundaries. Green Belt within the built-up area of the conurbation is labelled 'C' and has not been assessed as part of this study. This reflects their scale, complex local geography and roles as part of the Green Infrastructure of Birmingham and the Black Country (serving biodiversity and recreational functions) and the local separation of urban areas (Green Wedges).

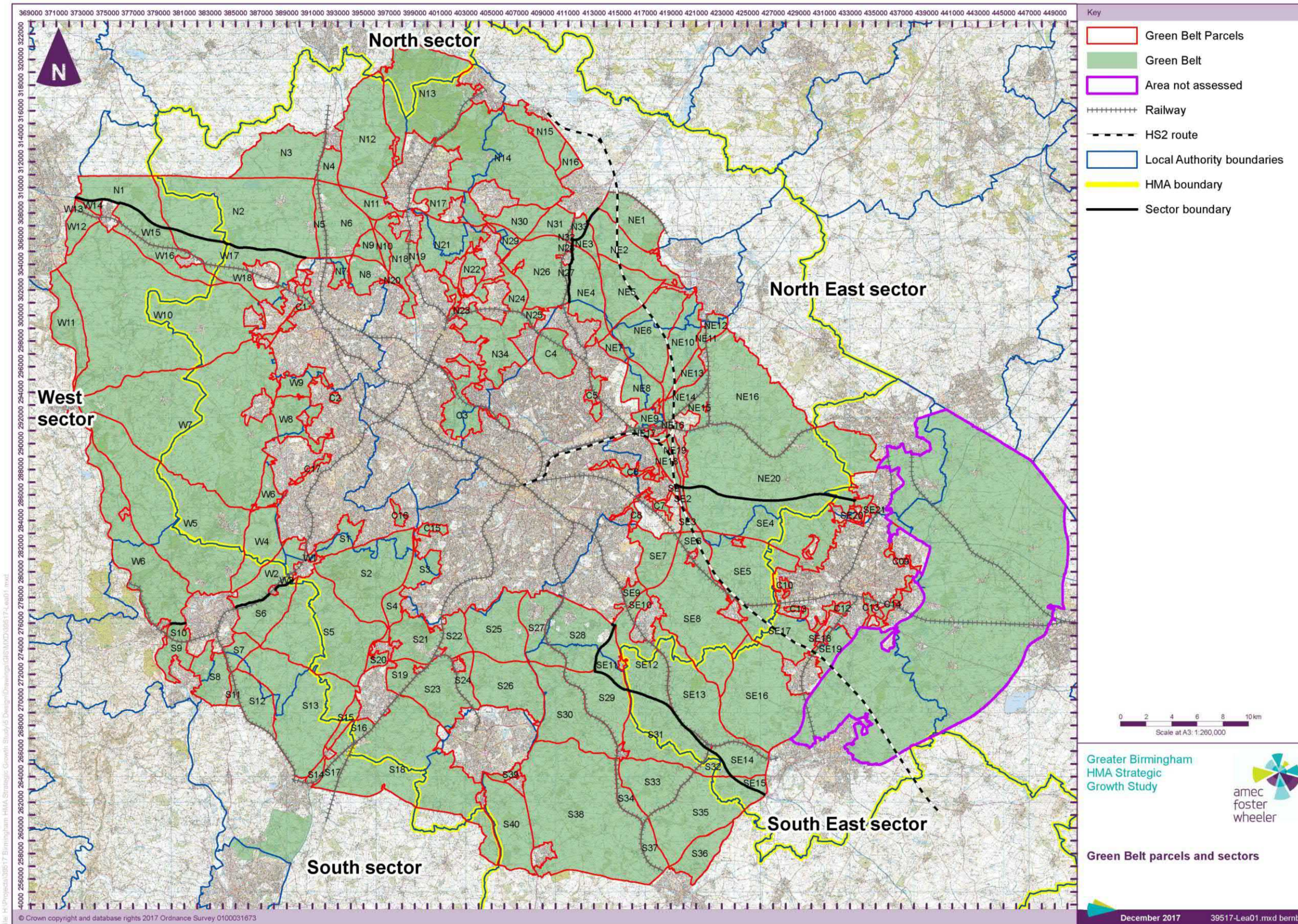
- 8.9 The administrative boundaries that define the HMA often do not coincide with the clear boundary features that have been used to define the parcels. Consequently, whilst land to the east of Coventry is excluded from the assessment, reflecting its location clearly outside the Greater Birmingham HMA, the Green Belt in other locations, whilst being outside the Greater Birmingham HMA, merits assessment because of its shared character and functional connection through transport corridors (notably: Codsall to Albrighton, Dudley/South Staffordshire/Wyre Forest; Bromsgrove to Droitwich; Birmingham to Coventry; Coventry/Bedworth/Nuneaton edges). To further aid analysis and reflect the geography of the conurbation and its rural context, five Sectors across the HMA (West, North, North East, South East, South) have been identified. These are used as the basis for the assessment of the character and function of the Green Belt.
- 8.10 A fundamental purpose of Green Belt policy is to maintain the openness (i.e. a general absence of built development) of land (NPPF para.79). It does this through providing a clear limit beyond which development should not advance (often where this has not been defined on the ground by a substantial physical feature of various kinds – roads, waterways etc); this is termed the 'containment of sprawl'. 'Sprawl' is often seen as ribbon development along transport corridors, but also in the piecemeal extension of urban areas into open countryside. Complementing the prevention of sprawl is the maintenance of the separation between built-up areas, maintaining their separate physical identity through the presence of undeveloped land of varying extents. Strategically (and against the purposes of the Green Belt set out in the NPPF), this refers to towns, but locally it can also be important in respect of settlements of varying sizes.
- 8.11 Green Belt policy is also applied to prevent the incremental erosion of open land by development which would result in an urbanised character, termed 'encroachment', and widely seen along fragmented urban edges which developed prior to Green Belt designation. In the absence of Green Belt policy this trend would continue. In addition, there are many areas adjacent to large urban areas where Green Belt policy prevents this pattern from starting, particularly in the light of their

high degree of accessibility by car, a role which can be highly localised and subtle. For the purposes of this study, such patterns have been sought to be identified at a strategic scale.

Assessment of the Fulfilment of Green Belt Purposes

- 8.12 Professional judgement is used to identify spatially where four of the five Green Belt purposes are being fulfilled (excluding the 'assisting regeneration' purpose which is associated with the Green Belt as a whole) by inspection of Ordnance Survey maps and aerial photography. No site visits have been undertaken, reflecting the strategic nature of the study. Areas demonstrating the fulfilment of individual Green Belt purposes are mapped.

Figure 25: Green Belt Parcels and Sectors Identified for Analysis



- 8.13 Whilst the assessment of the individual purposes of Green Belt policy demonstrates the various complex interrelationships between built-up areas of various scales and their wider context, determination of the strategic role of the Green Belt is required to help to identify where, in principle, development might be located without comprising that strategic role. As strategic policy tool, the West Midlands Green Belt was established to contain the pressures for sprawl of the conurbation into open countryside and maintain the separation between the conurbation and its surrounding towns (i.e. preventing the coalescence of built-up areas thereby maintaining their identity). Safeguarding the countryside from encroachment and protection of the setting of historic towns are judged, for the purposes of this strategic study, to be more diffuse or localised in character. (Note: the NPPF does not make a distinction between the five purposes of Green Belt policy).
- 8.14 To assist with the judgement of where the strategic purposes of the Green Belt are being met, the mapping outputs of the individual purposes of *checking sprawl* and *preventing the merger of towns* (i.e. what can be regarded as the key functions of the West Midlands Green Belt) are combined to show areas making a **Principal Contribution**, with all other areas shown as making a **Supporting Contribution**. Areas making a Principal Contribution reflect the combination of two purposes of Preventing Sprawl and Maintaining Separation, and areas making a Supporting Contribution covering the remainder of the Green Belt which includes areas identified as specifically safeguarding the countryside from encroachment related to the edge of a built-up area, but also more generally though preventing incremental change in remoter areas, where development would damage their character. In this way, the strategic contribution of the Green Belt is discernible, in turn acting as a guide to determining where development is more likely to compromise its strategic function.
- 8.15 Figure 26 summarises the Green Belt Study method and Table 42 sets out the definitions, evaluation criteria and mapping symbols which have been used to identify where Green Belt purposes are being met.

Figure 26: Green Belt Study Approach

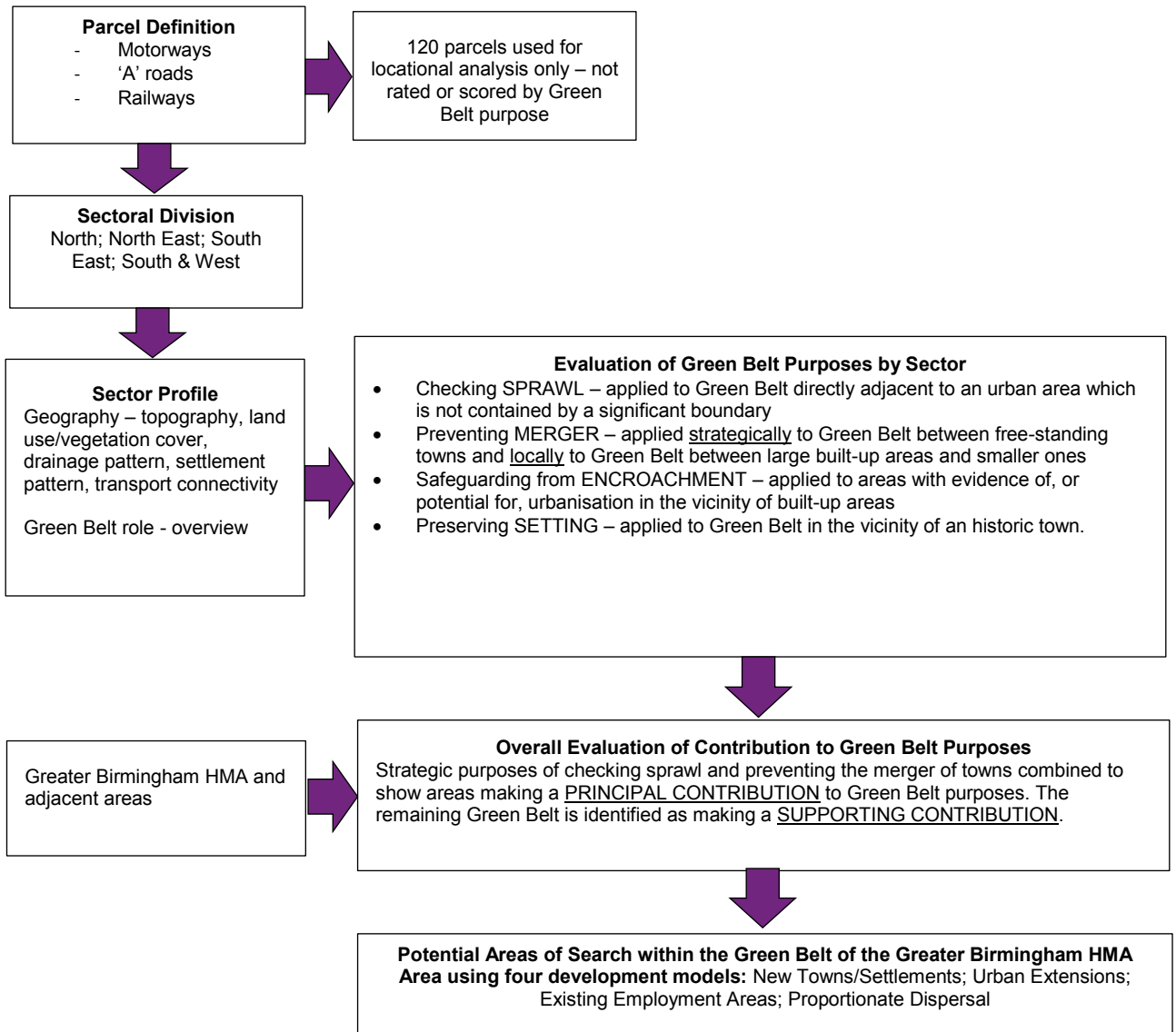




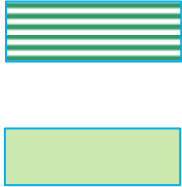


Table 42: Definition of Terms, Assessment Criteria and Mapping Symbols

NPPF Green Belt Purposes	Definition of Terms	Assessment Criteria and Mapping Symbols
<p>To check the unrestricted sprawl of large built-up areas</p>	<p>Sprawl – spread out over a large area in an untidy or irregular way (Oxford Dictionary online). This includes ribbon development which is development along a main road, especially one leading out of a town or village (Oxford Dictionary Online). This includes historical patterns of, or current pressures for, the spread of all forms of development along movement corridors, particularly major roads.</p>	<p>Assessment Criteria - Green Belt prevents the extension of a built-up area into open land where development would not otherwise be restricted by the presence of a <u>permanent</u> boundary such as a road, railway or river. Whilst Green Belt policy prevents ‘leap-frogging’ of such containing features, these are taken as a clear limit of development where it would <u>in principle</u> be more challenging to argue they should be breached. It is accepted that locally there will be instances of where development from an uncontained edge could be rounded off to a more substantial feature, thereby contributing to good urban design.</p> <p>Symbols – applied to Green Belt directly adjacent to an urban area where there is no significant boundary which clearly contains that development.</p> 
<p>To prevent neighbouring towns from merging</p>	<p>Merger/Coalescence – the physical or visual linking of two settlements or areas of built form.</p>	<p>Assessment Criteria - Green Belt prevents development which would result in the merger or erosion of a gap (physically or visually) between settlements.</p> <p>Symbols – applied STRATEGICALLY to Green Belt lying between (free-standing) towns or the Birmingham conurbation and satellite towns, and also LOCALLY to Green Belt between large built-up areas and smaller ones.</p> 
<p>To assist in safeguarding the countryside from encroachment</p>	<p>Encroachment– a gradual advance beyond usual or acceptable limits (Oxford Dictionary online).</p> <p>The countryside – open land with an absence of built development and urbanising influences, and characterised by rural land uses including agriculture and forestry.</p> <p>Openness – absence of built development or other urbanising elements (i.e. not openness in a landscape character sense which concerns topography and woodland / hedgerow cover).</p>	<p>Assessment Criteria - Green Belt maintains the openness, or prevents the further erosion, of un-urbanised areas, particularly in relation to a settlement edge. The wider role of this purpose across the Green Belt as a whole is noted.</p> <p>Symbols – applied in the vicinity of built-up areas where there is evidence of change or risk thereof, reflecting an area’s accessibility and vulnerability to incremental change.</p> 
<p>To preserve the setting and special character of historic towns</p>	<p>Historic town – settlement or place with historic features identified through conservation area or other historic designation(s). The historic towns identified for the purposes of this study are: Stratford upon Avon, Kenilworth, Lichfield, Rugeley, Penkridge, Bridgnorth and Bewdley.</p>	<p>Assessment Criteria - Green Belt helps to preserve the setting and character of an historic town.</p> <p>Symbols – applied to the broad vicinity of historic towns</p> 

	<p>Overall contribution to Green Belt purposes – to determine where the Green Belt performs a strategic function. .</p>	<p>Symbols – two-fold division of:</p> <p>PRINCIPAL CONTRIBUTION being areas meeting the purpose of checking unrestricted sprawl and/or the maintenance of strategic separation.</p> <p>SUPPORTING CONTRIBUTION being all remaining areas.</p> 
--	--	---

Development Models to be tested

- 8.16 The PBA Study³¹ identified six types of development model as the basis for the spatial distribution of large-scale development. Table 43 defines the characteristics of these models which are used for testing where and how, in principle; growth might be accommodated, yielding broad areas of search which can be subjected to testing at the local level by spatial location and mix of model (Chapter 3). Other, more complex, combinations of spatial development model have been proposed³². However, for the needs of this study, using a smaller range of development types provides a more focused means of testing the principle of accommodating development in the Green Belt. The identification of areas where the development models could, in principle, be applied is not part of an exhaustive inventory of all potential locations.
- 8.17 Alongside this, councils within the HMA will need to progress work to identify small and medium-sized sites which can contribute to meeting the housing needs shortfall through the preparation of local plans. This process will include preparation of local Green Belt assessments considering the performance of sites against green belt purposes at a finer grain. Small and medium-sized development opportunities arising from this work will play an important contribution in meeting the housing needs shortfall, particularly in the short- and medium-term.

³¹ Peter Brett Associates (2015) Greater Birmingham and Solihull LEP/Black Country Local Authorities: Strategic Housing Needs Study Stage 3 Report

Note: the PBA Report used detailed intelligence from local authorities to determine, authority-by-authority, whether development of each type could be located in respect of quantity, feasibility and timing. The report notes overlap between the typologies, for example development along a public transport corridor can be an extension to an existing settlement; or if large enough when added to a small settlement, a new town might be created.

³² See Greater Birmingham & Solihull LEP (2013) The Spatial Plan for Recovery and Growth – Consultation Draft Ten potential models were identified: 1. Urban Consolidation; 2. Enterprise Belt including the M42 Gateway; 3. New Towns / Settlements; 4. Extend Existing Major Urban Areas; 5. Dispersed Growth; 6. Corridors of Growth – Rail; 7. Corridors of Growth - M6 Toll; 8. Multi Centred Targeted Approach (small towns outlying Birmingham); 9. Dormitory Settlements; 10. Accommodating some of the GBSLEP's growth elsewhere.

Table 43: Strategic Development Models

Development Model	Characteristics to assist identification of possible locations
Urban Intensification	<ul style="list-style-type: none"> • Within urban areas, brownfield sites (existing and windfall) and greenspaces (open space and back gardens) for developments which are likely to be of relatively high density compared to their surrounding context. • Of varying scale according to opportunities. • NOT USED IN THE GREEN BELT STUDY.
Urban Extensions	<ul style="list-style-type: none"> • Ranging from 1,500 to 7,500 dwellings plus services and small-scale employment, added to an existing settlement/or suburban edge. • A degree of self-containment is aimed for, but recognising their dormitory function with use of nearby employment and service centres. • Planned on Garden Village principles.
Public Transport Corridors	<ul style="list-style-type: none"> • Rail corridors with or without an existing station. • Scale is likely to vary considerably according to the nature of the receiving environment. • USED AS PART OF THE CONSIDERATION OF URBAN EXTENTIONS/NEW SETTLEMENTS.
Employment Areas	<ul style="list-style-type: none"> • Strategic employment areas with a key employer and/or clustering of employers • Housing of the range of urban extensions (1,500 to 7,500 dwellings). • Likely to be located adjacent to, or in the vicinity of, a Motorway junction. • NB: This model concerns existing strategic sites as a focus for additional housing development in the broad vicinity and does not consider potential for further employment provision. A detailed analysis of existing and potential strategic employment areas is presented in: Peter Brett Associates (September 2015) West Midlands Strategic Employment Sites Study
Proportionate Dispersal	<ul style="list-style-type: none"> • Smaller scale (500 to 2,500 dwellings) with development distributed throughout an area according to local assessments of capacity (particularly services) and available sites through the SHLAA process. • Likely to be part of the identification of sites through the Local Plan process (such as identified sites but not required for the current plan period). • Would complement small-scale allocations identified through local Green Belt Reviews.
New Towns/ Settlements	<ul style="list-style-type: none"> • Of a significant scale: 10,000 to 15,000 dwellings, plus services and employment. • Located on a public transport corridor, in practice a railway line, with or without an existing station. • Possibly incorporating an existing settlement, particularly where this is focused on a railway station. • Aspiration for self-containment, recognising that there will be some commuting to adjacent employment and service centres. • Planned on Garden Town/Village principles.

Assessment of Green Belt Character and Purposes

Preface

- 8.18 Each of the five sectors (south, west, north, north east and south east) identified in Figure 25 above is described in terms of its broad geography (landscape and settlement pattern etc) and its Green Belt role, which has in turn drawn on the more detailed analysis of the fulfilment of Green Belt purposes by sector set out in Appendix B.

South Sector (The M40 to the A456, including Stratford, Redditch, Bromsgrove, Droitwich and Kidderminster) (see Appendix B pp.1–8)

Geography

Landscape Character, Topography, Land Use and Drainage Pattern

- 8.19 The majority of the southern sector lies within National Character Area (NCA) 97 Arden. The southern-most edges south of Bromsgrove and Redditch lie within the NCA 106 Severn and Avon Vales; and the western edge falls within NCA 66 Mid Severn Sandstone Plateau.
- 8.20 The sector has a complex geology that supports a varied topography. Whilst the area is dominated by rolling or gently undulating landform, it contains a number of notable escarpments, ridges and hills such as the Clent and Lickey Hills located to the north-west of the sector between Hagley and Bromsgrove. It also contains a number of meandering clay river valleys.
- 8.21 Land use is predominantly rural farmland and former wood-pasture. Field patterns are diverse and range from small scale well defined irregular arable and pastoral fields and woods to a more regular pattern of medium to large scale arable fields associated with former estates. To the north, near the southern edge of the conurbation, there is a complex landscape of relic commons and former wood pasture. This is a well wooded or timbered landscape with frequent large woodlands often associated with rising land, ridgelines and hills. There a number sports and playing field uses located within the vicinity of the main settlements and include a number of golf courses located on the edge or within the vicinity of the conurbation itself i.e. the Hagley Golf and Country Club, Rose Hill Golf Club, Hollywood Golf Club, Shirley Golf Club.
- 8.22 The Rivers Arrow and Alne run through the centre of the sector and flow into the River Avon to the south. A section of the River Stour flows eastwards between the Clent Hills and Halesowen. These lie within the catchment of the River Severn. The sector also contains sections of both the Worcester to Birmingham Canal and the Stratford-upon-Avon Canal and a number of large reservoirs typically located on the fringes of the conurbation i.e. Bentley and Frankley Reservoirs and the Upper and Lower Bittell Reservoirs.

Settlement pattern

- 8.23 The main settlements are Birmingham (forming the southern edge of the West Midlands conurbation), Kidderminster, Bromsgrove, Redditch, Droitwich Spa and Stratford upon Avon. There are many smaller settlements including those dispersed across the rural farmland (i.e. Stourport-on-Severn, Droitwich Spa, Wychbold, Astwood Bank, Studley, Alcester and Henley-in-Arden) and those found dotted around the fringes of the conurbation itself (i.e. Hagley, Romsley, Lickey and

Barnt Green, Hopwood, Alvechurch, Hollywood, Wythall, Dickens Heath, Cheswick Green and Majors Green).

- 8.24 Of note is the higher occurrence of small scale settlements, clusters of dwellings and ribbon development associated with the Hollywood, Dickens Heath and Cheswick Green part of the sector (south of the Shirley and west of the M42) and in the Lickey, Barnt Green, Cofton Hackett, Marlbrook and Catshill area. In addition, the edge of the conurbation at Frankley/Bartley Green is heavily incised resulting in a complex and less distinct settlement pattern.
- 8.25 Settlement pattern away from the conurbation and within the rural farmland is relatively well dispersed with many discrete clusters of dwellings and villages and frequent farmsteads and wayside dwellings in more settled landscapes.

Transport connectivity

- 8.26 The M5, M42 and M40 form major transport corridors within this sector. There are also a number of major and busy A roads radiating from the conurbation, including the A456, A491, A38, A441 and A435. The principal railway lines crossing and adjacent to the sector are: Birmingham to Kidderminster, the Redditch to Lichfield cross-city line, Birmingham to Cardiff/the south west, Birmingham to Stratford-upon-Avon; and Birmingham to London (Marylebone).

Green Belt Role

- 8.27 The strategic function of the Green Belt in this sector principally relates to a combination of containing the southwestward and southern extension of the Birmingham conurbation, through containing sprawl and maintaining the separate identity of the towns to the south. There are clear areas of separation between the conurbation and principal towns in the sector, and between principal towns, that is: Birmingham and Kidderminster, Birmingham and Bromsgrove, Birmingham and Redditch, Bromsgrove and Redditch and Bromsgrove and Droitwich. This role is, complemented by the prevention of wider encroachment through incremental change, both directly from the urban edge and from numerous settlements of various sizes located in the Green Belt.
- 8.28 Whilst the broad distinction between contiguous built development and open countryside has been largely maintained, there are many examples of its blurring both as a result of development prior to the application of Green Belt policy and the effects of severance by motorways. Consequently, in the gap between the Birmingham conurbation (at Rubery/Longbridge) and Bromsgrove, for example, the Green Belt acts to maintain strategic separation, prevent sprawl and prevent further incremental encroachment, the latter issue being notable around the smaller settlements of Lickey, Blackwell and Barnt Green.

Figure 27: South Sector – Meeting of Green Belt Purposes

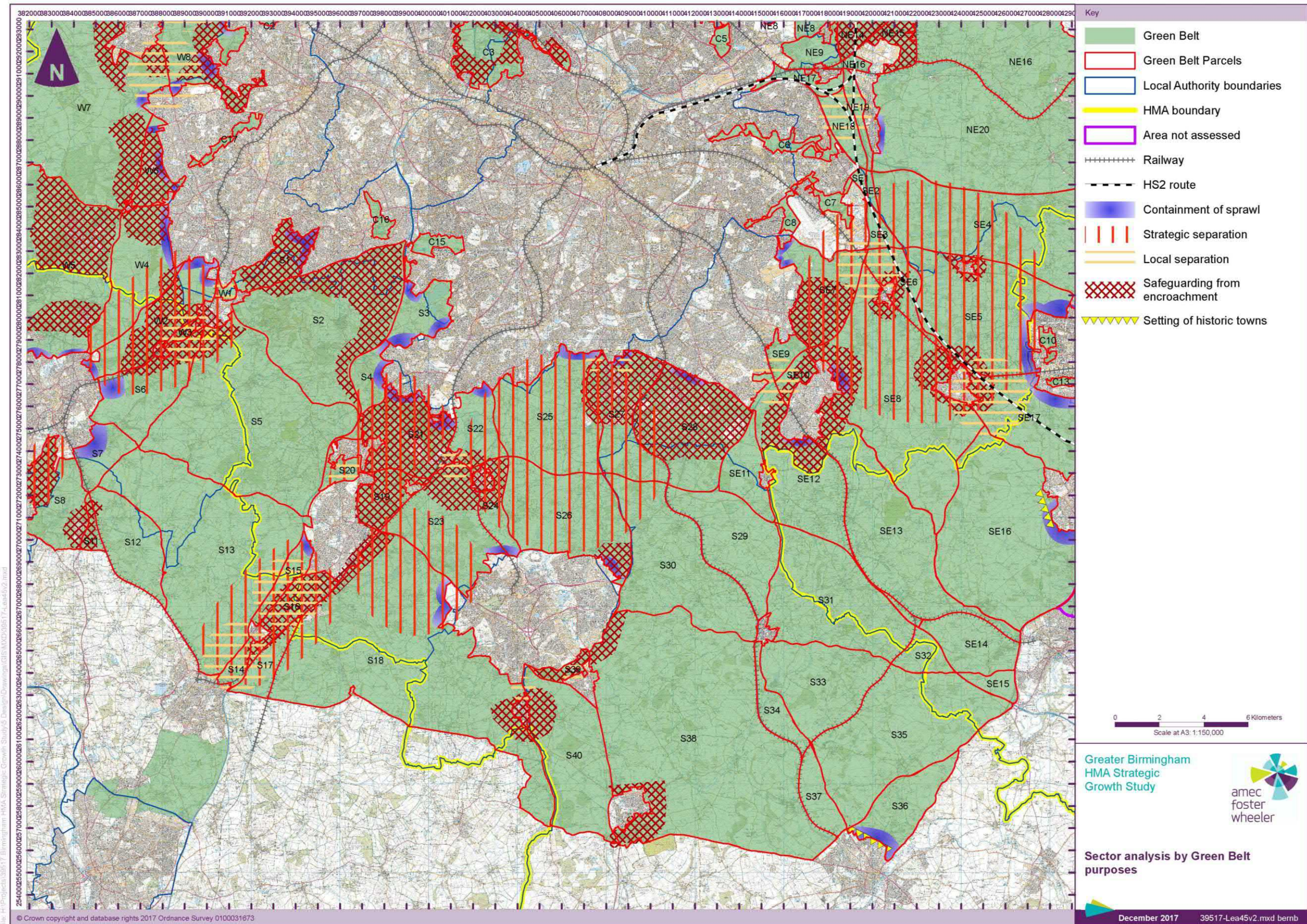
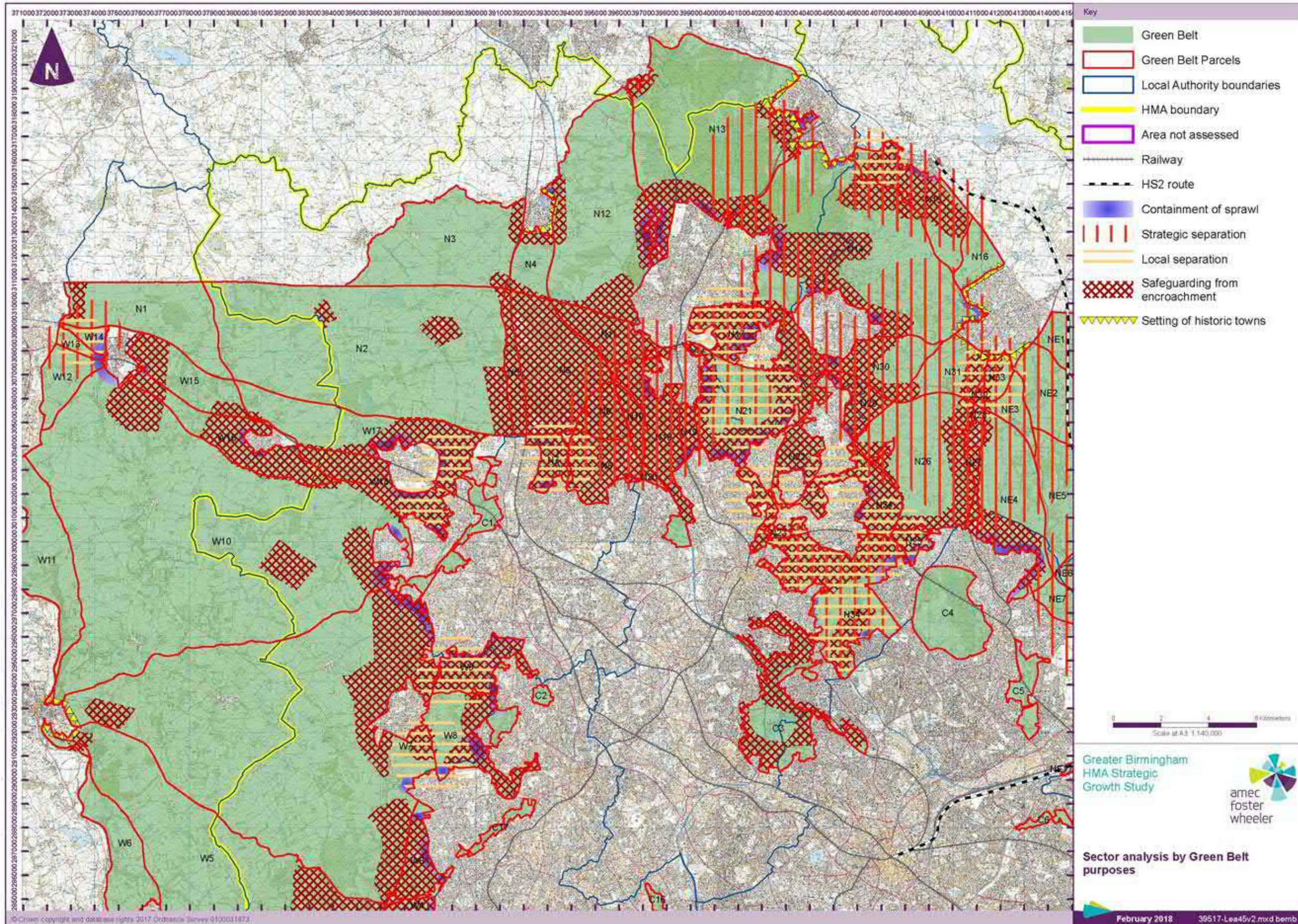


Figure 28: West Sector – Meeting of Green Belt Purposes



West Sector – The A456 to the M54, including Kidderminster (N) and Telford (S)
(see Appendix B pp 9-15)

Geography

Landscape Character, Topography, Land Use and Drainage Pattern

- 8.29 The majority of the western sector lies within NCA 66 Mid Severn Sandstone Plateau. The northern most edge lies within NCA 61 Shropshire, Cheshire and Staffordshire Plain. The sector is dominated by a sandstone plateau that underpins an undulating landscape, with tree-lined ridges. It is drained by the Rivers Stour and Worfe and a number of fast flowing streams within small steep-sided valleys. By contrast, the topography within the western fringes of the area, associated with the River Severn valley, is irregular with steep gorges.
- 8.30 Land use is predominantly rural and arable across the extensive sandstone plateau that extends eastwards to the urban edge of the West Midlands conurbation. Large open arable fields dominate the core and eastern parts of the area and are punctuated by remnant areas of lowland heath, acid grassland and small wooded streamside dells known locally as dingles. Further west, associated with the Severn Valley, land use is a mix of arable and pasture land associated with a smaller and more irregular shaped fields.
- 8.31 Interlocking blocks of mixed woodland and old orchards provide a well-wooded landscape and coniferous plantations combine with parklands to give an estate character. There are a number sports and playing field uses located on the edges, or within the vicinity, of the main settlements and the conurbation. These include a large number of golf courses associated with the edge of the conurbation i.e. the Wergs Golf Club, the South Staffordshire Golf Club, Perton Park Golf Club, Penn Golf Club, Himley Park, Sedgley Golf Centre and the Stourbridge Golf Club.
- 8.32 The sector lies within the catchment areas of both the River Severn and River Stour. The River Severn runs along the western edge of the area and the River Stour forms the main water course within the area. There are a number of small streams and rivers including the River Wolfe. Sections of both the Staffordshire and Worcestershire Canal and the Shropshire Union Canal are located within the area with sections linking to the river system. Large open water bodies are limited in number and generally confined to reservoirs.

Settlement Pattern

- 8.33 The sector lies immediately west of the towns of Wolverhampton, Dudley and Stourbridge that combines to form the western edge of the West Midlands conurbation. The towns of Telford and Bridgnorth lie to the west and Kidderminster to the south.

- 8.34 Beyond the conurbation, the main settlements are Telford, Kidderminster, Bridgnorth, Albrighton, Wombourne and Codsall. The latter two are large villages located within close proximity to Wolverhampton but are compact and physically distinct from the conurbation itself. However the fringes of Wolverhampton and Dudley are less distinct with a higher density of ribbon development, small scale settlements and clusters of dwellings, creating a less distinct settlement pattern. This is compounded by the more complex heavily incised edge of the conurbation itself in this location.
- 8.35 Away from the conurbation there is a concentration of towns and villages along the main river systems with the larger towns and villages i.e. Kidderminster, Bewdley and Bridgnorth, located in and around the Severn Valley. Settlement patterns away from the river valleys are of a more rural character of small hamlets and isolated farmsteads. Other settlements lie alongside the Birmingham to Shrewsbury Railway line that runs between Wolverhampton and Telford and includes the villages of Codsall, Albrighton and Shifnal.
- 8.36 The settlements of Bridgnorth and Bewdley, associated with Severn Valley, are notable historic towns within the sector.

Transport connectivity

- 8.37 Large infrastructure is limited to the M54 (roughly between Telford and Wolverhampton) that forms the northern boundary and the Birmingham to Shrewsbury Railway line. A number of 'A' roads extend across the area connecting the larger towns and villages; and the A456 forms the southern boundary to this sector. In addition, Wolverhampton Airport at Halfpenny Green (west of Wolverhampton) is used by both aviation schools and private aviation operators and is also has a number of non-aviation land uses.

Green Belt Role

- 8.38 The strategic function of the Green Belt to the west of the Birmingham conurbation primarily relates to containing potential sprawl and the maintenance of a reasonably strong distinction between the urban edge and the wider open countryside. As such the principal role of the Green Belt relates to the immediate urban edges, although large expanses of Green Belt play a more generalised role in safeguarding the accessible countryside from encroachment. The large village of Kinver is an example of the pressures for generalised encroachment into the surrounding open countryside.
- 8.39 Locally, the potential for sprawl associated with the settlements of Kidderminster, Wombourne, Codsall/Bilbrook, Albrighton and Shifnal is checked, along with more generalised encroachment which blurs the distinction between town and country. Strategic separation between Telford and Shifnal, Kidderminster and Bewdley and Kidderminster and Stourbridge/Hagley is notable, as is localised separation between Wombourne and Himley and Codsall/Bilbrook and Wolverhampton. Protection of the setting of Bewdley and Brignorth is also notable.

North Sector – The M54 to A38, including Telford (N) and Lichfield (see Appendix B pp 16-24)

Geography

Landscape Character, Topography, Land Use and Drainage Pattern

- 8.40 The central and eastern parts of the north sector lie within NCA 67 Cannock Chase and Cank Wood. The western part lies within NCA 61 Shropshire, Cheshire and Staffordshire Plain with its outer edges falling into NCA 66 Mid Severn Sandstone Plateau. The central and eastern parts have an elevated and rolling landform associated with underlying sandstone and the South Staffordshire Coalfield. In contrast, the western part is lower lying and predominantly flat or gently undulating with a series of small sandstone ridges. The area contains a number of river valleys.
- 8.41 Land use across the majority of the area is mixed rural farmland although large areas have become fragmented and urban fringe in character due to the proximity/ density of urban development and settlements. These include the northern edges of the West Midlands conurbation (i.e. Wolverhampton, Bloxwich, Walsall and Sutton Coldfield) that are heavily incised and interrupted (or heavily enclosed) by urban development and the corridor of land extending from the conurbation itself towards Cannock and Burntwood in the north. Within areas of rural farmland there are a variety of field patterns ranging from small scale pasture and arable fields to large scale arable fields. Interspersed amongst farmland within the central and eastern areas is a number of large scale working aggregate quarries.
- 8.42 This is a well treed landscape with frequent woodlands and tree cover associated with Cannock Chase, heathland, parkland and sandstone ridgelines. Cannock Chase is an extensive area of open heathlands and plantation woodlands located to the north of Cannock. The area also contains a number of open spaces (such as Sutton Park, Sandwell Valley Country Park) and golf courses located on the edge or within the vicinity of the conurbation itself i.e. the Golf Academy, Bloxwich Golf Club, Druids Heath Golf Club, Aston Wood Golf Club, Sutton Coldfield Golf Club, Little Aston Golf Club, Calderfield Golf and Country Club, Walsall Golf Club and the Great Barr Golf Club.
- 8.43 The River Penk is the main watercourse in the area, this small river flows through the western part of the area towards the River Sow (a tributary of the River Trent). The central and eastern areas are drained by small streams that drain radially from the elevated landform around Cannock. The southern parts of this area contain the Wyrley and Essington Canal, the Staffordshire and Worcestershire Canal and the Shropshire Union Canal. There are a large number of large reservoirs (i.e. Belvide Reservoir, Calf Heath Reservoir, Gailey Lower and Gailey Upper Reservoirs and the Chasewater reservoir) and pools associated with aggregate quarries.

Settlement pattern

- 8.44 The area extends from the northern edge of Wolverhampton and Birmingham (the West Midlands conurbation) towards Telford (north-west), Penkridge and Rugeley (north) and Lichfield (north-east). These together with Cannock, Burntwood, Norton Canes, Brownhills and Aldridge form the main settlements within the area.
- 8.45 There is a distinct contrast between settlement patterns across the area. The settlement pattern within the area between the Bloxwich (northern edge of the conurbation), Cannock, Burntwood and Aldridge is a less distinct with a high density of settlements, ribbon development and large scale urban development. This is also the case within the areas that fringe the complex and heavily incised northern edges of the conurbation. By contrast, the settlement pattern associated with the western and eastern parts of the area is relatively dispersed and typified by large farmsteads, hamlets, villages and market towns (i.e. Penkridge).

Transport connectivity

- 8.46 The area contains a number of major transport corridors i.e. the M6, M6 Toll and M54. There are also a number of major and busy A roads serving the conurbation and main settlements, including the A5, A41, A449, A34, A460, A461, A452 etc. There are a number of railway lines linking the major settlements and the conurbation.

Green Belt Role

- 8.47 The role of the Green Belt in the north sector is exceptionally complex, reflecting the evolution of an intricate urban form associated with mining activity, the A5/M6 Toll/A38 corridor, and the subsequent application of Green Belt policy. Whilst Green Belt prevents the 'natural' tendency towards the coalescence of the various settlements, this is difficult to discern in many places. The dominant strategic role of the Green Belt is the maintenance of the separation of the various towns, principally Cannock and Wolverhampton/Walsall, Cannock and Burntwood, Cannock and Rugeley, Burntwood and Lichfield, Burntwood and Brownhills and Lichfield and Burntwood/Brownhills, Aldridge and Sutton Coldfield. This complements various instances of local separation such as between Bloxwich and Pelsall.
- 8.48 The containment of sprawl across the sector is equally complex, reflecting the multitude of urban edges associated with the various settlements, with particular contributions made along the northern edge of Sutton Coldfield, the eastern edges of Cannock, the south western and southern edges of Rugeley, and the north eastern edges of Walsall. Protection of the remaining open countryside from more general encroachment complements the immediate containment of sprawl.

The historic settlements of Penkridge, Rugeley and Lichfield benefit from the protection of their setting.

Figure 29: North Sector – Meeting of Green Belt Purposes

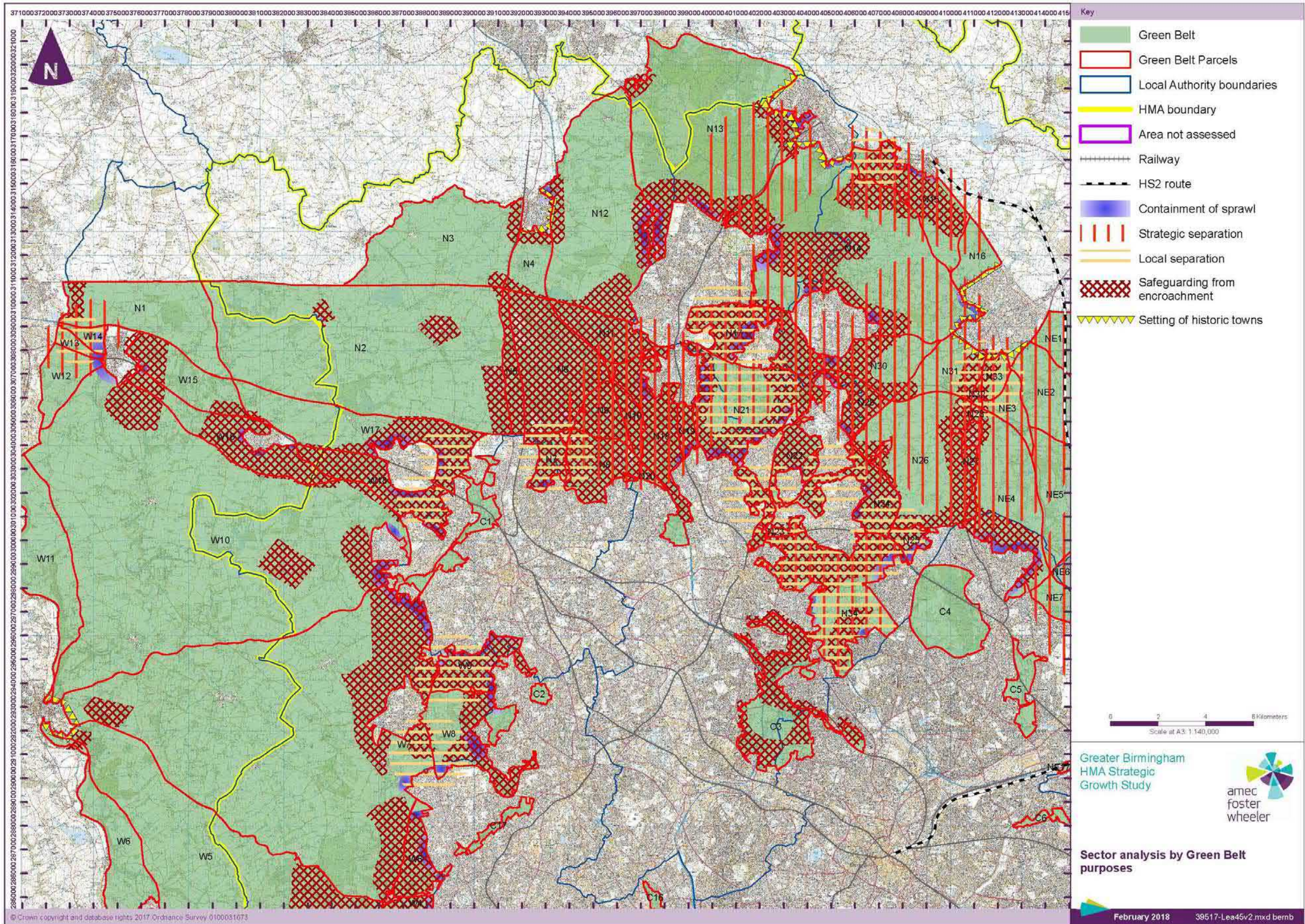
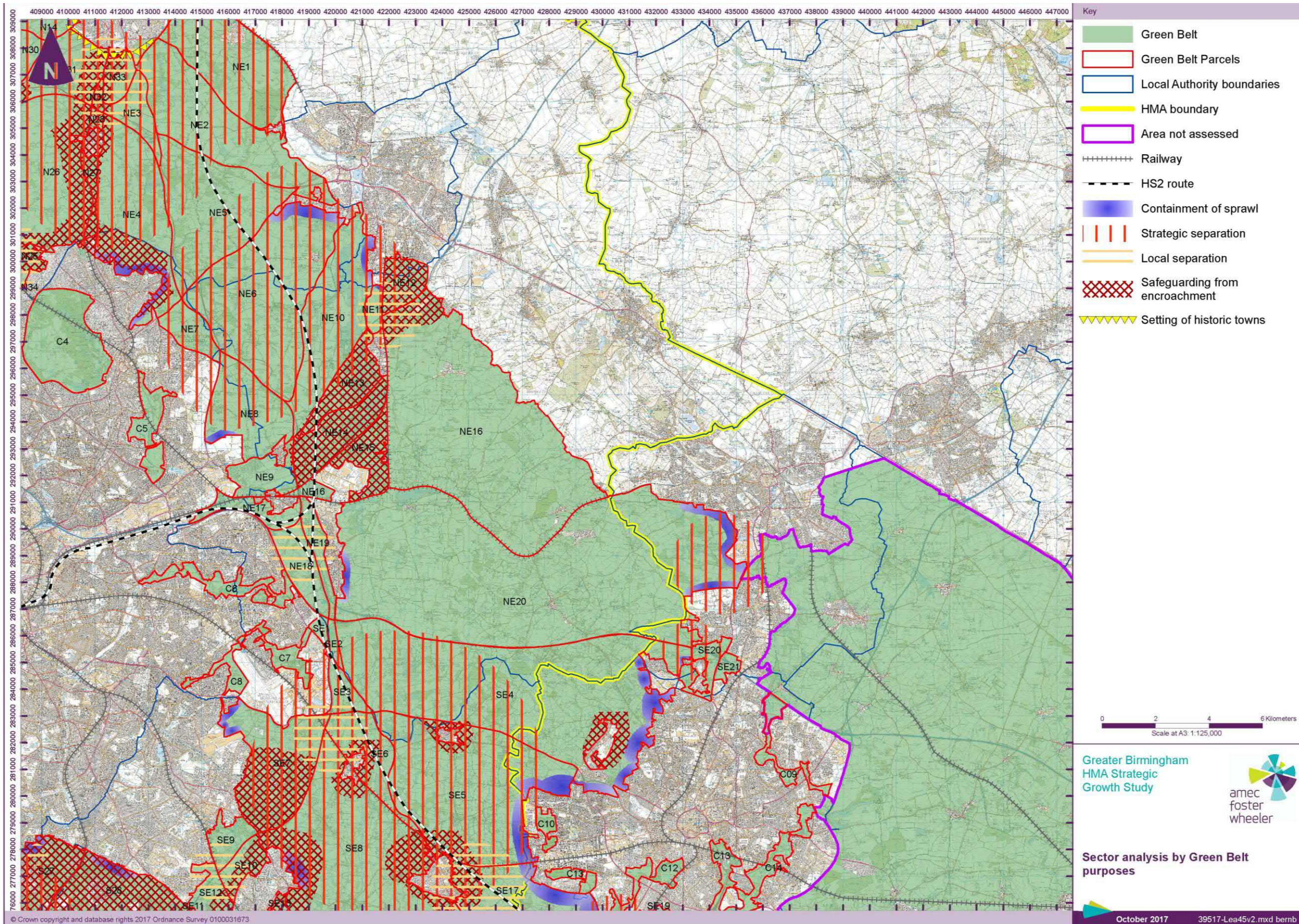


Figure 30: North East Sector – Meeting of Green Belt Purposes



North East Sector – The A38 to the M6, including Tamworth and Nuneaton (see Appendix B pp 25-28)

Geography

Landscape Character, Topography, Land Use and Drainage Pattern

- 8.49 The central part of the north east sector lies within NCA 97 Arden. The western part lies within NCA 67 Cannock Chase and Cank Wood and the area east of Coventry and Nuneaton lies within NCA 94 Leicestershire Vales. In addition, the southern section of the linear NCA 69 Trent Valley Washlands extends into the sector south of Tamworth (associated with the River Tame).
- 8.50 The sector has a complex geology and landform that supports a varied landscape. The area west of the River Tame and Tamworth has an elevated landform associated with the underlying sandstone and the South Staffordshire Coalfield and contains few river systems. The narrow and low-lying landscape of the River Tame forms a distinctive linear feature to the east that is often clearly delineated by adjoining higher ground. The central area is dominated by elevated landform associated with the Warwickshire Coalfields west of Coventry and Nuneaton and merges into an area of low lying clay valleys and ridges with a more elevated glacial plateau to the east. The area contains a number of river valleys.
- 8.51 Land use across the majority of the area is predominantly mixed rural farmland although broad areas of landscape have become notably fragmented and urban fringe or industrial in character due to the influence of mining, quarrying and the proximity/ density of urban development. These include the edges of Tamworth (south), Nuneaton (south), Bedworth and Coventry (north) and areas near small settlements such as New and Old Arley and Ansley.
- 8.52 Field patterns are diverse, irregular in shape and range from small scale arable and pastoral fields and woods to medium to large scale arable fields often associated with former estates. Within the River Tame valley corridor, pastoral fields dominate the floodplain and the river terraces are dominated by arable fields. This corridor has also been subject the historic sand and gravel extraction with many landscapes restored to agriculture, water bodies and wetlands, some of which serve as leisure facilities such as the Kingsbury Water Park south of Tamworth. This is a well treed landscape with frequent woodlands and tree belts often associated parkland, hill tops and ridgelines.
- 8.53 There are a number of golf courses located on the edge or within the vicinity of the conurbation itself i.e. Moor Hall Golf Club, the Belfry, Wishaw Golf Club, Maxstoke Park, Walmley Golf Club and Pype Hayes Park.

- 8.54 The River Tame is the main watercourse in the area and is the main tributary of the River Trent. It runs from the eastern edge of the conurbation near Lee Marston and flows north through Tamworth. River Blythe runs northwards along the eastern edge of Coleshill and flows into the River Tame near Lea Marston. There are numerous of small rivers and streams within this sector. There a large number of water bodies or pools associated with gravel and sand extraction within the River Tame and Shustoke Reservoir forms the largest reservoir in the area.

Settlement pattern

- 8.55 The area extends from the north-eastern edge of Birmingham (eastern edge of the conurbation) towards Coventry and Nuneaton in the east, Tamworth in the north-east and Lichfield in the north. These form the main settlements within this sector and the next tier of settlements includes Coleshill (east of Birmingham) and Bedworth and Bulkington (between Coventry and Nuneaton).
- 8.56 The settlement pattern away from the conurbation and main settlements is relatively dispersed and distinct (typified by small villages, scattered farmsteads and large country houses). However the fringes of Birmingham and the other main settlements are less distinct with a higher density of ribbon development, small scale settlements and clusters of large scale urban development (often commercial) along major transport corridors. The eastern edge of Birmingham contains a dense network of major transport corridors and the associated settlement pattern is both complex and diverse. This is notable within the area associated with Coleshill, Water Orton and Cudworth where M42, M6 and M6 Toll roads converge. Similar settlement patterns occur on the fringes of all the main settlements and also within the corridor between Nuneaton and Coventry and between Tamworth and Birmingham (near Lea Marston). The physical distinction between the settlements of Nuneaton and Bedworth has been severely eroded.

Transport connectivity

- 8.57 The area contains a number of major transport corridors i.e. the M6, M42, M6 Toll and M69. There are also a number of major and busy A roads serving the conurbation and main settlements, including the A38, A5, A444 etc. There are a number of railway lines linking the major settlements and the conurbation.

Green Belt Role

- 8.58 The role of the Green Belt to the north east of Birmingham predominantly relates to the strategic separation of Lichfield from Sutton Coldfield and Tamworth, and Tamworth from Sutton Coldfield, Bedworth and Nuneaton, as well as the containment of sprawl from unbounded edges of particular areas of these settlements, such as at Roughley (Sutton Coldfield) and Fazeley.

- 8.59 Local separation is apparent between Birmingham (Castle Bromwich/Kingshurst) and Coleshill, and between Tamworth and Kingsbury. Prevention of encroachment is concentrated on land between Sutton Coldfield and Lichfield and Tamworth and Coleshill. The course of the River Tame, its floodplain and extensive past gravel extraction plays a significant role in steering the direction of development pressure in the sector and consequently the role of the Green Belt in managing this.

South East Sector – The M6 to the M40 including Coventry, Rugby and Leamington/Warwick (see Appendix B pp.29–33)

Geography

Landscape Character, Topography, Land Use and Drainage Pattern

- 8.60 The western and central parts of the south east sector lie within NCA 97 Arden. The sector has a complex geology that supports a varied topography. Whilst the area is dominated by rolling or gently undulating landform. The location of the Warwickshire coalfields to the west of Coventry supports a more elevated landform than the lower lying Knowle Basin located to the east of Birmingham.
- 8.61 Land use is predominantly rural farmland. Field patterns are diverse and range from small scale arable and pastoral fields to medium to large scale arable fields often associated with former estates. To the west, near the edges of the conurbation, there is a complex landscape of well-defined small fields, woods and pasture. This is a well treed landscape with frequent woodlands and tree belts, often associated with rising ground, estates and mature parkland.
- 8.62 The area has also undergone significant land use change associated with an extensive area of gravel and sand extraction associated with the Knowle Basin (near Little Packington and Meriden). Whilst mineral working continues within this area, a number of landscapes have been restored to agricultural or leisure uses such as golf courses (i.e. Stonebridge Golf Club, North Warwickshire Golf Club). There are also a number open spaces, sports/ playing field land uses located on the edge or within the vicinity of the conurbation itself i.e. Elmdon Nature Park, Hatchford Brook Golf Course, Copt Heath Golf Club and Widney Manor Golf Club.
- 8.63 The area contains a number of meandering river valleys. The River Blythe and the River Avon are the main watercourses in the area. The River Blythe is located centrally and runs between Solihull and Coleshill. The River Avon runs between Leamington Spa and Rugby within the eastern part of the area. There are a number of small rivers and streams. The sector contains sections of both the Stratford-upon-Avon Canal and the Grand Union Canal. There a large number of water bodies or pools associated with the Knowle Basin gravel and sand extraction area.

Settlement pattern

- 8.64 The area extends south-east from Solihull towards Stratford-on-Avon, Leamington Spa, Warwick and Rugby. The main settlements are Solihull (forming the south-eastern edge of the West Midlands conurbation), Leamington Spa, Coventry and Rugby. The next tier of settlement includes the town of Kenilworth and a small number of large villages such as Dorridge/ Knowle and Balsall Common.
- 8.65 Of note is a higher density of small scale settlements and ribbon development located to the east of Solihull associated with the Dorridge/Knowle area and between the edge of the West Midlands conurbation and the M42 near Catherine-de-Barnes and Bickenhill. Higher density and less distinct settlement pattern is also characteristic of the fringes of Coventry. Of note are the heavily incised edges of the settlement, the areas of Green Belt surrounded by urban development within the town itself, and large urban development associated with Coventry Airport (to the south west). In addition, the physical distinction between the settlements of Coventry and Bedworth has been severely eroded.
- 8.66 By contrast, the settlement pattern away from the conurbation and main settlements remains relatively dispersed, typified by small nucleated villages and scattered farmsteads. Smaller settlements of Balsall Common, Hampton in Arden and Meriden remain relatively distinct and well dispersed.

Transport connectivity

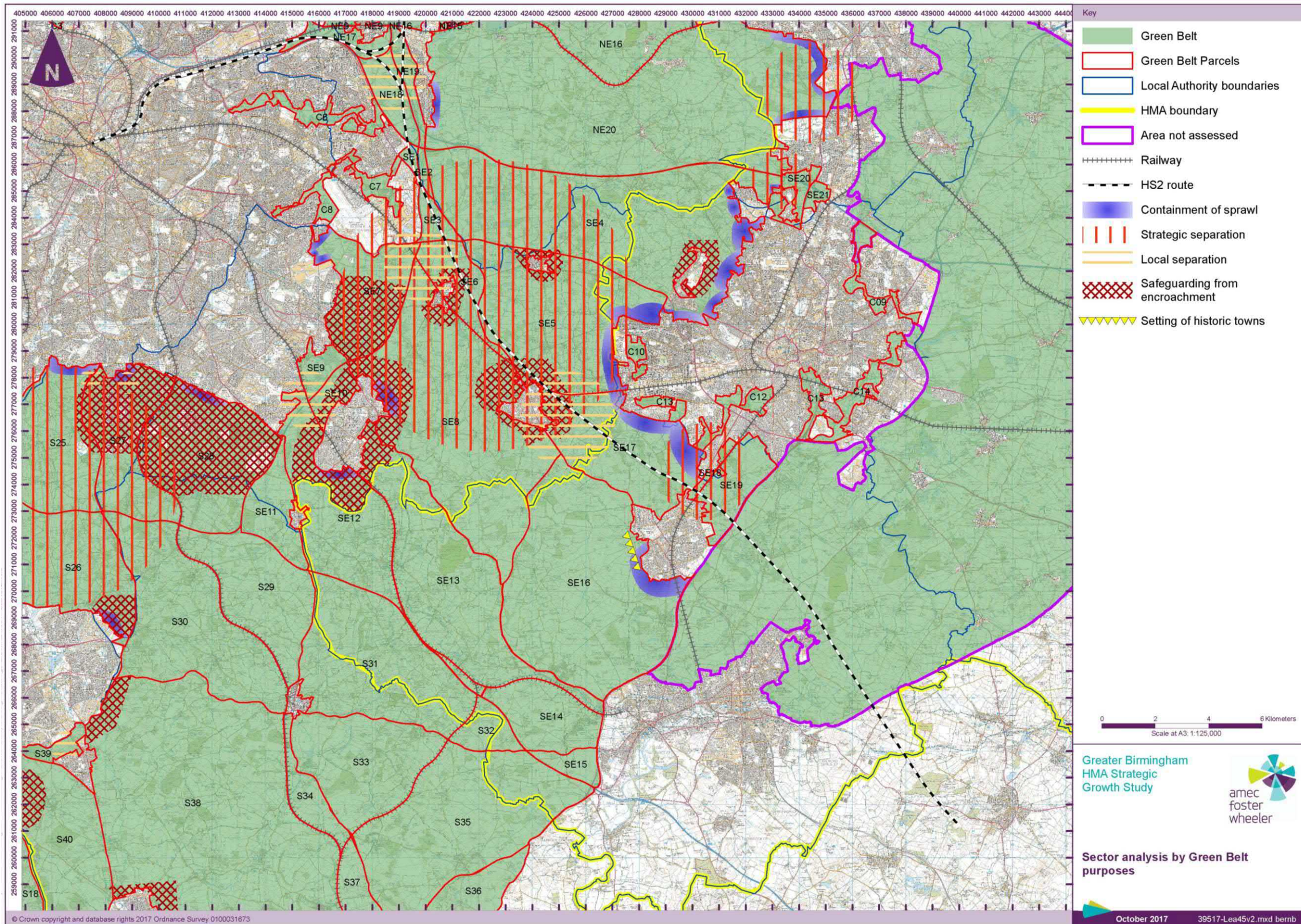
- 8.67 The M42 and M6 form major transport corridors within this sector. There are also a number of major and busy A roads serving the conurbation, including the A446, A41, A452, A45, A46, A423, etc. There are two railway lines linking the major settlements with the conurbation.
- 8.68 Birmingham Airport and the National Exhibition Centre (NEC) are both located on the edge of Birmingham conurbation, off the A45 and M42. Coventry Airport is located to the south west of Coventry and is used by both private and commercial/ cargo operators.

Green Belt Role

- 8.69 The role of the Green Belt between Birmingham and Coventry is dominated by the strategic separation of the two urban areas, complemented by the containment of sprawl along the western edge of Coventry and Kenilworth in particular. The urban edge around the Birmingham conurbation appears to be better contained, but also is heavily influenced by the presence of the M42 corridor. More localised separation is apparent between Dorridge and Solihull, Birmingham (NEC/Airport) and Hampton in Arden, and between Coventry and Balsall Common.

8.70 Prevention of encroachment into open countryside, either through evidence of past change or potential for future change, is particularly apparent in the vicinity of Dorridge, Catherine-de-Barnes, Balsall Common, Hampton- in-Arden, Meriden and Allesley to the west of Coventry.

Figure 31: South East Sector – Meeting of Green Belt Purposes



Analysis of Overall Contribution to Green Belt Purposes

- 8.71 Figures 32-34 separate out the role of the Green Belt across the study area to illustrate the broad pattern of individual Green Belt roles identified in the Assessment. Figure 32 shows where the Green Belt serves to prevent the unrestricted sprawl of large built-up areas; Figure 33 shows where the strategic separation of towns along with more localised separation; and Figure 34 shows where encroachment into open countryside is prevented and the setting of historic towns protected.
- 8.72 Figure 35 illustrates where the four Green Belt purposes are met across the study area. This does not imply that areas of Green Belt without a specific mapping symbol applied make no contribution to Green Belt purposes, rather that this role is more diffuse and/or localised.
- 8.73 Taking this approach a stage further, Figure 36 splits the four Green Belt purposes into two categories: **Principal Contribution** (which combines the purpose of preventing sprawl and maintaining strategic separation) and **Supporting Contribution** (which is all other areas of the Green Belt not identified as making a Principal Contribution). The pattern of Principal and Supporting Contributions shown in Figure 35 reflects both the relationship between the conurbation and its satellite settlements and the vulnerability of land at the edges of large built-up areas to sprawl where the containment of development by permanent boundaries is not always strong. The relationship between Principal and Supporting Contributions is subtle but important because the division between the two is not a clear line and there will be examples of local geography where Green Belt policy has acted strongly to steer development pressures.
- 8.74 Identification of Principal and Supporting Contributions in this way does not imply a differing value between areas of Green Belt *per se*, but rather that it is possible to identify where change (i.e. development) could in principle undermine the overall strategic role of the Green Belt as a planning policy tool applied to the West Midlands conurbation.
- 8.75 As with the identification of the fulfilment of individual Green Belt purposes, the summary of Principal and Supporting Contribution is intended to be an indication of the presence of strategic function in a particular locality, and not related to precise boundaries. This would be the role of local studies which make use of detailed fieldwork to support their analysis as part of the Local Plan making process.

Figure 32: Checking the Sprawl of Large Built-up Areas

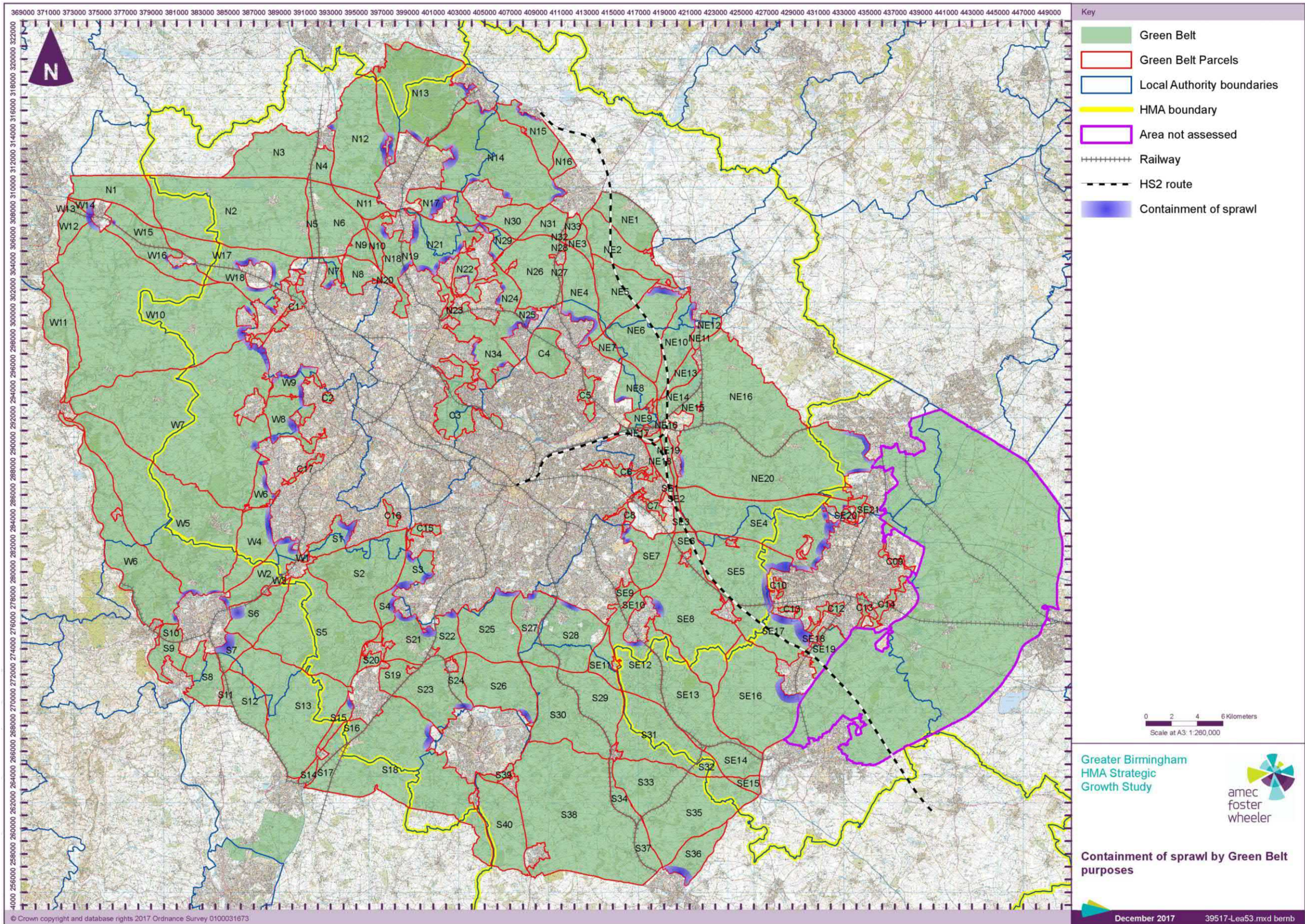


Figure 33: Preventing Towns from Merging

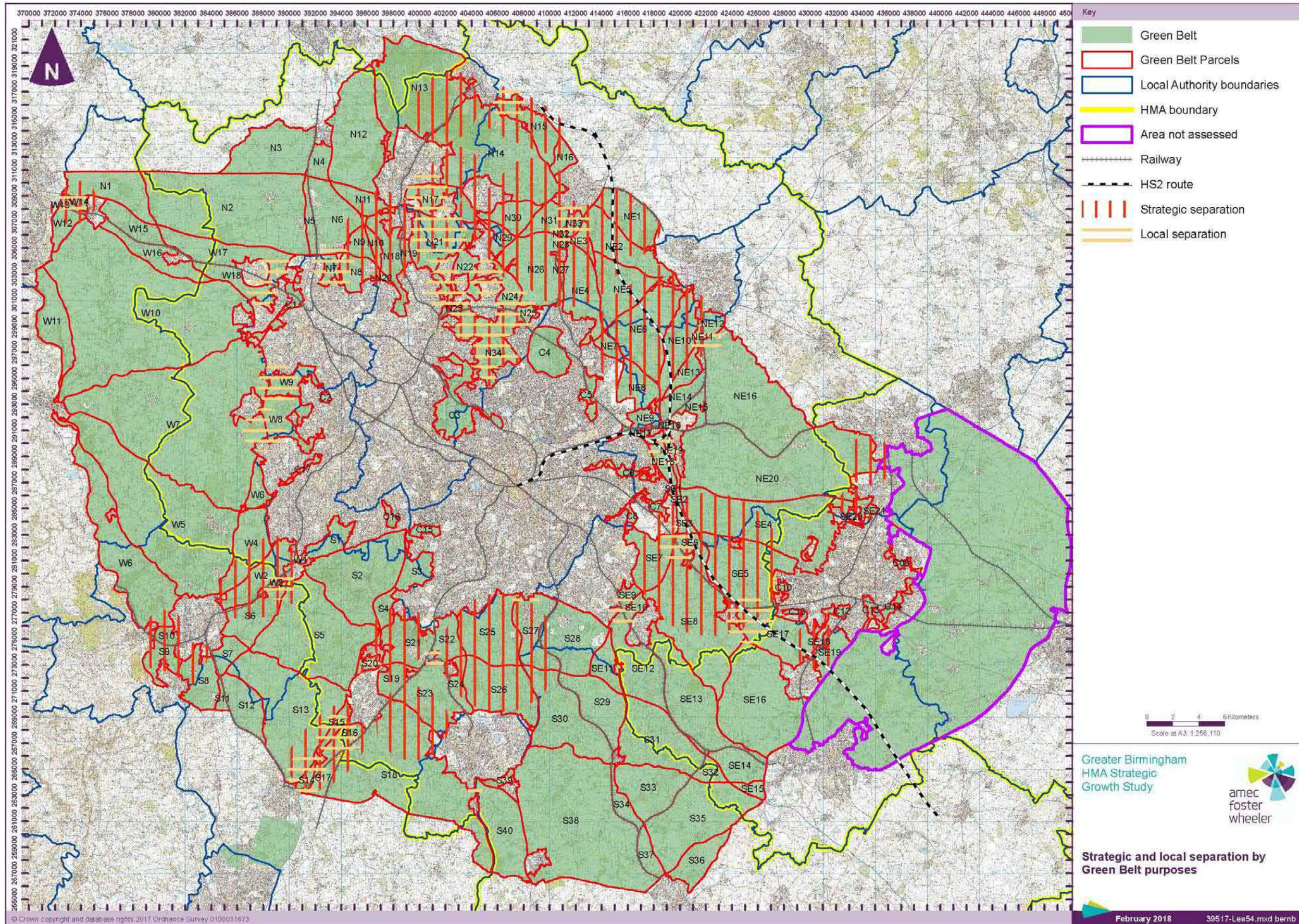


Figure 34: Safeguarding the Countryside from Encroachment and Protecting the Setting of Historic Towns

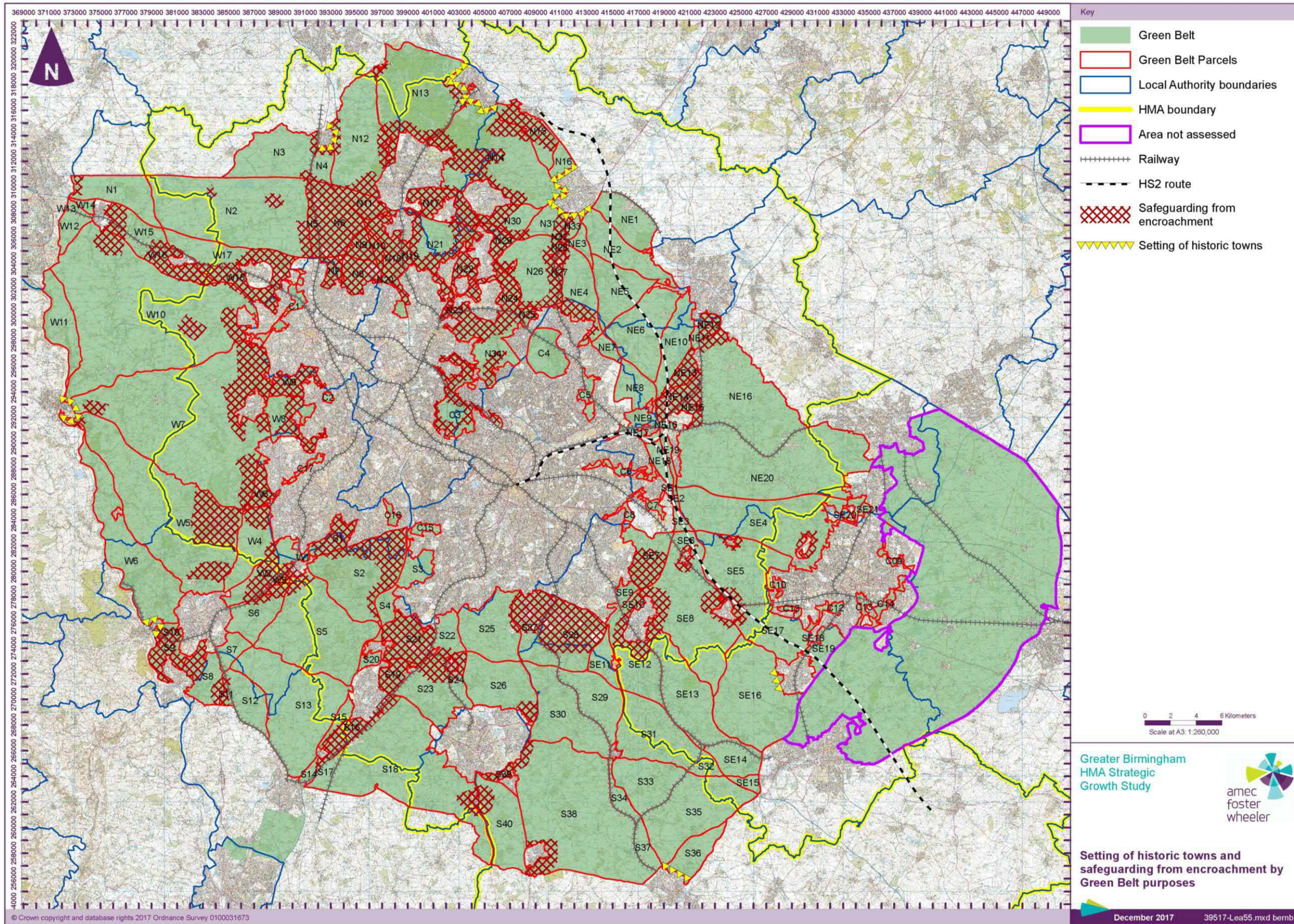


Figure 35: Contribution to Green Belt purposes (Study Area)

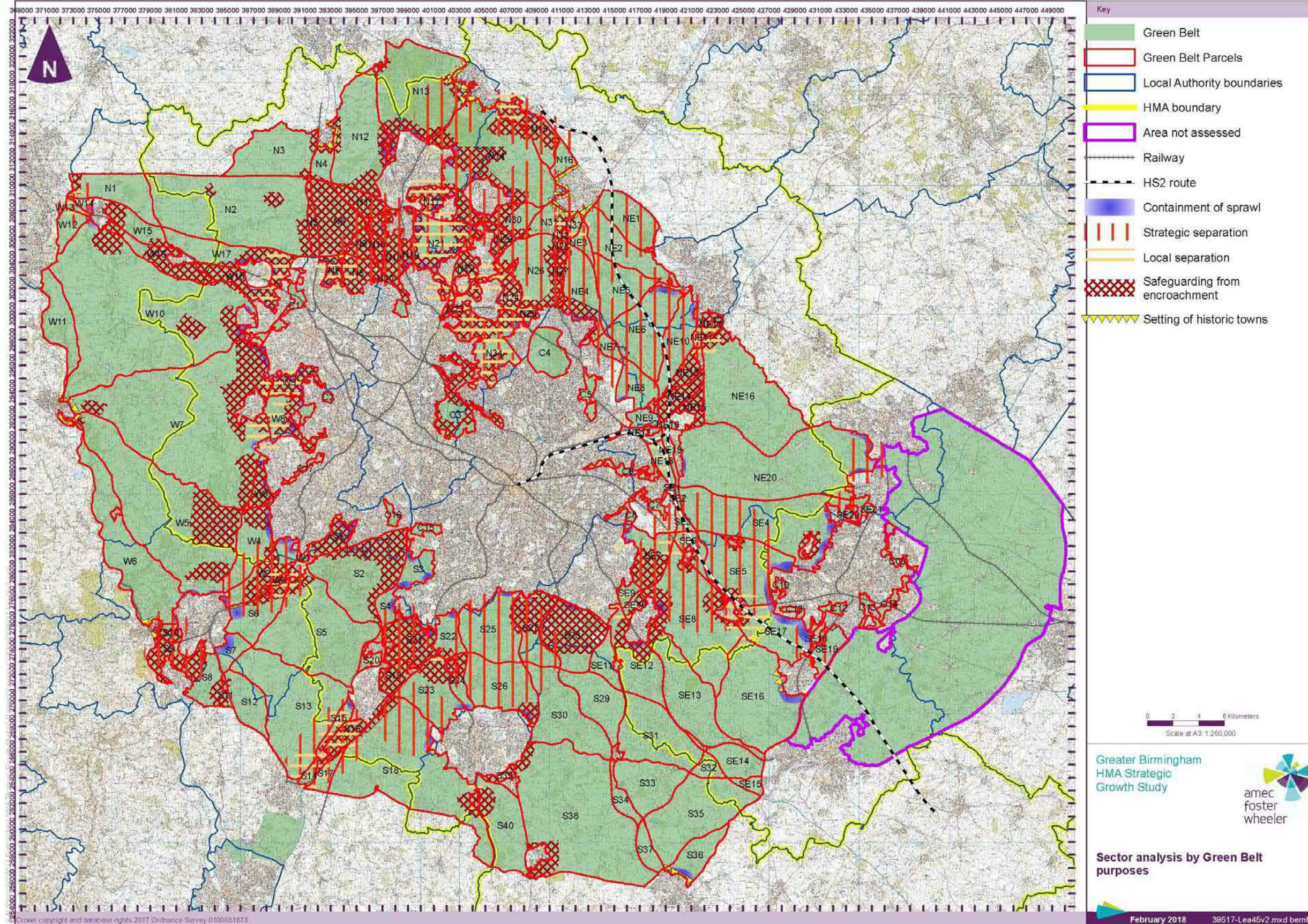
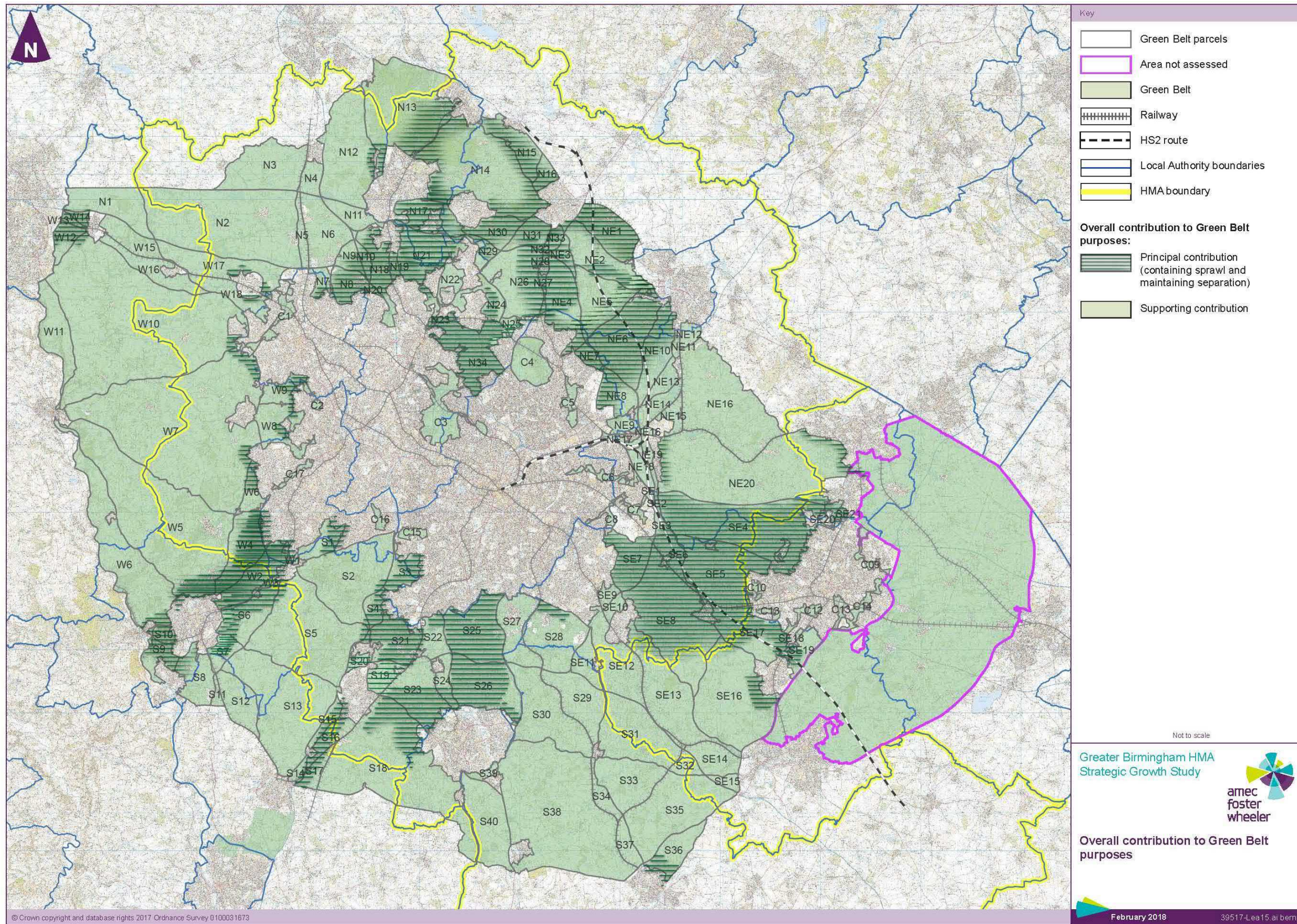


Figure 36: Overall Contribution to Green Belt Purposes by Principal and Supporting Contribution



Identification of Areas of Search

Order of Identification

- 8.76 This section moves on to consider potential areas within the Green Belt which might be suitable to receive development. It is part of a broader sequential approach to identifying areas of search as follows:
- The use of previously developed sites and buildings, and other suitable urban areas not protected for amenity or other purposes.
 - Sites outside the Green Belt.
 - Sites adjoining urban areas which are, or can be, well served by public transport.
 - Sites in locations not adjoining urban areas which are, or can be, well served by public transport, which in practice are rail corridors.

Consideration of Green Belt Locations

- 8.77 The West Midlands Green Belt fulfils both strategic and more localised purposes. Strategically the Green Belt contains pressures for sprawl of the conurbation into surrounding countryside and maintains the separation between the conurbation and surrounding towns. More diffusely and often locally, the Green Belt contributes to protecting the countryside from encroachment and the separation of individual settlements from adjacent urban areas. This twofold division is recognised in the analysis of Green Belt judged to be making a Principal Contribution to Green Belt purposes (i.e. sprawl and strategic separation) and that judged to be making a Supporting Contribution (i.e. encroachment, local separation and the setting of historic towns).
- 8.78 Table 44 sets out the criteria for identifying Areas of Search using the six PBA development models. Whilst the avoidance of areas making a Principal Contribution to Green Belt purposes is a starting point, there are clear exceptions which can be reasonably applied. Notably these relate to the presence of a railway line or a key employment area, but also areas which because of the nature of existing development, local geography and locational guidance identified in the NPPF, can still be considered as potential Areas of Search. Their early exclusion could mean a significant missed opportunity for achieving a balanced planning outcome across the study area. As part of taking forward any of the proposed Areas of Search, additional detailed scrutiny of both the strategic and local effects on the role of the Green Belt would be required, as well as the application of sustainable development and landscape considerations.
- 8.79 This approach accords with guidance in the NPPF (para. 84) which states that: *“when drawing up or reviewing Green Belt boundaries local planning authorities should take account of the need to promote sustainable patterns of development. They should consider the consequences for sustainable development of channelling development towards urban areas inside the Green Belt*

boundary, towards towns and villages inset within the Green Belt, or towards locations beyond the outer Green Belt boundary.” The approach is also supported by the NPPF (para. 17) which notes that planning should: “actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development on locations which are or can be made sustainable.”

8.80 Areas outside the HMA but covered by Green Belt have not been considered for Areas of Search. There could be areas adjacent to the HMA which would meet the locational criteria set out in Table 44 and thereby join the areas identified in this report for further consideration.

Table 44: Strategic Development Models and their Application to Green Belt Areas

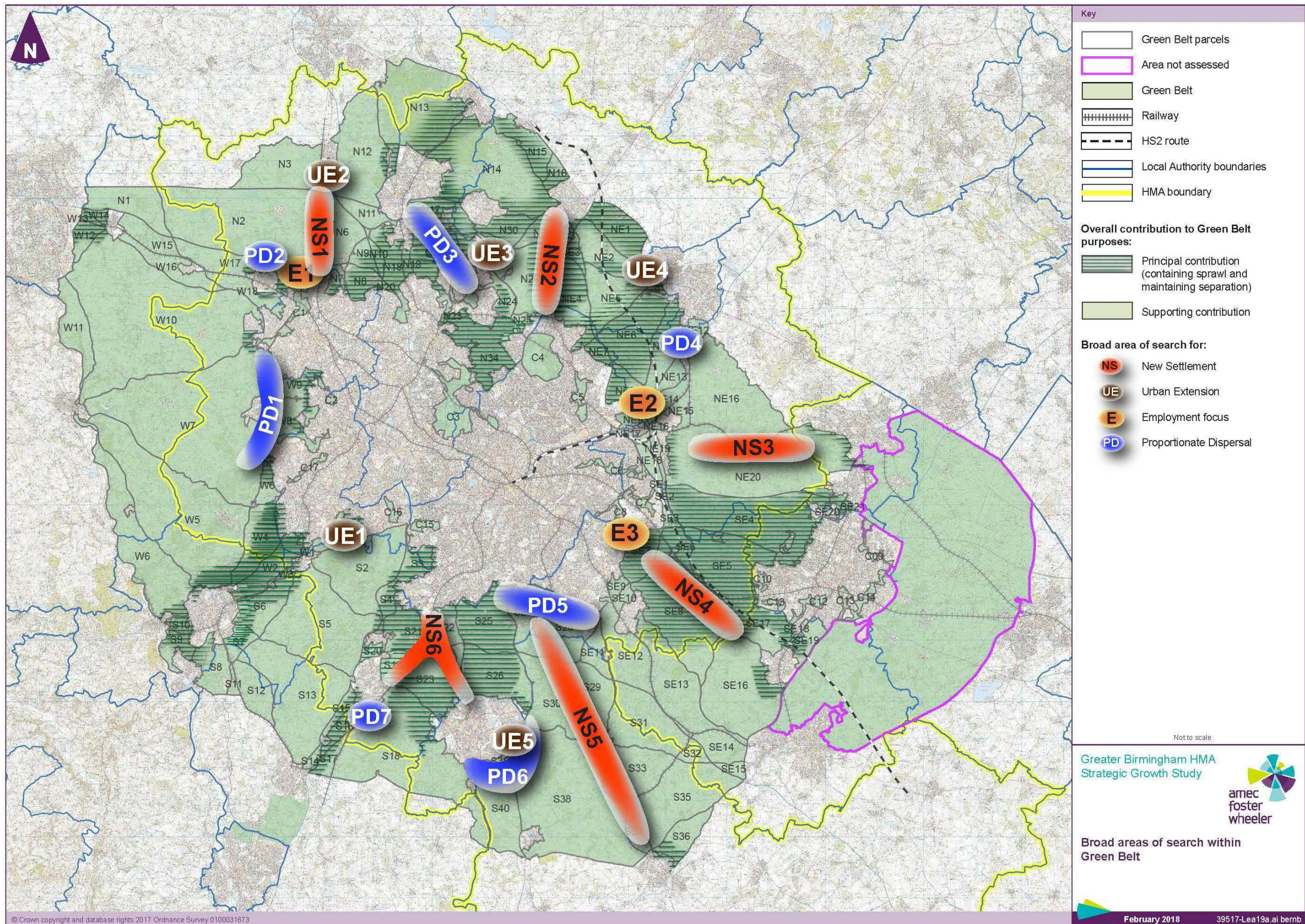
Development Model	Application to Green Belt Areas
Urban Intensification	Not applied to the Green Belt within urban areas, given their size, complex local geography and roles as part of the Green Infrastructure of Birmingham and the Black Country (having biodiversity and recreational functions) and the local separation of urban areas (Green Wedges). In addition, some urban areas have significant local ground constraints such as contamination and/or subsidence.
Urban Extensions	Considered in areas adjacent to a contiguous urban area, with the presence of key infrastructure such as a main road (which could be the focus for public transport). In some cases this coincides with areas identified as making a Principal Contribution to Green Belt purposes. Whilst locations adjacent to existing urban areas are more likely to be served by public transport, it is accepted that significant local constraints could exist in respect of infrastructure capacity and land assembly.
Public Transport Corridors	Not considered as development areas in their own right, but as part of the location of New Towns/Settlements and Urban Extensions.
Employment-Led Strategic Development	Considered in localities with a current strategically significant employment focus (namely Solihull/NEC/Birmingham Airport, i54 (South Staffordshire) and Coleshill/Minworth). In some cases this coincides with areas identified as making a Principal Contribution to Green Belt purposes.
Proportionate Dispersal	Used as a complement to existing proposals and/or potential larger development where because of the character of the Green Belt and urban edge, larger development models are unlikely to be appropriate (for example areas poorly served by transport infrastructure). Whilst the Green Belt along many edges of large built-up areas has been identified as making a Principal Contribution to the strategic role of the Green Belt because of its role in containing sprawl, development would not necessarily compromise its wider strategic function.
New Settlements	Applied to rail corridors where there is sufficient land such that development would not result in the physical coalescence between the new settlement and an existing town. In some cases this coincides with areas identified as making a Principal Contribution to Green Belt purposes.

Areas of Search

- 8.81 Applying the parameters set out in Table 43, Figure 37 illustrates a preliminary set of potential areas of search which have been identified for more detailed scrutiny. These areas of search are indicative and have been identified using both the analysis of Green Belt contribution (Figures 20 – 24 and Appendix B) and the inspection of constraints mapping, OS mapping and aerial photography. Paragraphs 8.82 – 8.108 detail each proposed Area of Search by development model. Where specific Areas of Search are to be further scrutinised, local Green Belt reviews (existing and proposed) will help to further refine the selection process³³.
- 8.82 The output from this particular analysis is a range of areas of search and development types which, in combination with areas of search outside the Green Belt, can be used to help test scenarios for accommodating the overspill requirement. Various combinations of development types, sizes of development and areas of search could be identified in light of this analysis. Should Green Belt locations be identified as part of the scenario-testing process, then detailed scrutiny against local Green Belt Reviews would be required, as well as a separate exercise on the likely cumulative impact on the Green Belt.
- 8.83 As part of this exercise, no significant areas of previously developed land in the Green Belt were identified. Should any such sites come to light, these would present a clear opportunity for development, either in their own right or as the focus for a larger development.
- 8.84 Alongside this Study, more local Green Belt Assessments considering the performance against Green Belt purposes at a finer grain may identify small and medium-sized development sites.

³³ See for example studies undertaken for Solihull, Stratford upon Avon, Warwick, North Warwickshire, Coventry, Tamworth, South Staffordshire, Lichfield and Cannock Chase.

Figure 37: Potential Areas of Search by Development Model



Areas of Search for New Towns / Settlements

8.85 The scale of development associated with new towns/settlements (10,000 to 15,000 dwellings) is such that there are relatively few areas with the combination of sufficient space and the presence of a rail corridor with a station or potential for a station. The following broad areas of search reflect this specific locational requirement. Their impact on the strategic function of the Green Belt would not only be in respect of altering the current relationship between built-up areas, but creating a new one where an area of Green Belt acquires a strategic separation role, for example. In all cases, there would be a fundamental change in the local settlement pattern and also potentially to the strategic settlement pattern of a broad locality.

Table 45: Potential New Settlement Broad Locations in Green Belt

Broad Location	Appendix B Green Belt Analysis Reference	Potential Effect of Strategic Function of the Green Belt	Potential Effect on Local Function of the Green Belt	Potential Constraints
Between Wolverhampton and Penkridge (Location NS1)	North Sector pp.14-20	Could introduce strategic separation issues between Penkridge and Wolverhampton	Setting of Penkridge.	Proposed rail freight interchange at Four Ashes
Between Lichfield and Sutton Coldfield (Location NS2)	North Sector pp.14-20 North East Sector pp.21-23	Part of the strategic gap between Lichfield and Birmingham	-	-
Between Birmingham and Nuneaton (Location NS3)	North East Sector pp.21-23	-	-	No existing infrastructure
Between Birmingham and Coventry (Location NS4)	South East Sector pp.24-27	Part of the strategic gap between Birmingham and Coventry	-	Alignment and severance effects of HS2
Between Birmingham and Stratford upon Avon (Location NS5)	South Sector pp.2-7	-	Setting of Stratford upon Avon	Limited road infrastructure
Between Birmingham and Bromsgrove/Redditch (Location NS6)	South Sector pp.2-7	Part of the strategic gap between Birmingham and Bromsgrove and Birmingham and Redditch	Local separation of Barnt Green and Alvechurch.	Significant existing development

- **Between Wolverhampton and Penkridge (Location NS1)** ³⁴

8.86 Development in this area, whilst being part of the busy corridor between Wolverhampton and Stafford (M6, A449, railway), would have a limited effect on the strategic role of the Green Belt because of the containment of the conurbation to the south by the M54 and the absence of a strategic separation function.

8.87 In terms of outlining an Area of Search, the West Coast Mainline (Wolverhampton – Stafford) forms a focus for development, although the nearest station is Penkridge, meaning that a new station is required. It is recognised that development of this scale could prompt the re-evaluation of the role of the Green Belt in this location which would acquire a strategic separation role between a new development and Stafford to the north, Cannock to the east and Wolverhampton to the south.

³⁴ Area of Search No 5, Table 49, Figure 38

Locally, the separation of settlements such as Coven and Brewood from new development would have to be considered.

8.88 There are relatively few nationally significant constraints in the area aside from small areas covered by Flood Zone 3 and potentially a number of Scheduled Ancient Monuments.

8.89 It should be noted that this area is also identified as a potential location for an urban extension (South of Penkridge) and it is unlikely that both could be accommodated. Furthermore, there is a proposal for development of a new Strategic Rail Freight Interchange in this Area of Search, with a Development Consent Order application due to be submitted in 2018. If this development was to be approved, then the principle of a new settlement in this location and/or its potential location would need to be reconsidered.

- **Between Lichfield and Sutton Coldfield i.e. Around Shenstone (Location NS2)**³⁵

8.90 Although part of the strategic gap between Lichfield and the Birmingham conurbation at Sutton Coldfield, the size of the gap and presence of a railway line and station at Shenstone means that it merits further scrutiny. The area around the existing settlement of Shenstone is largely free from nationally significant constraints (excl. Green Belt) aside from small areas covered by Flood Zone 3 and a small number of Ancient Scheduled Monuments.

8.91 The area contains the M6 Toll (which parallels the original A5) which has created a significant east-west boundary separating Lichfield from the edge of the conurbation at Sutton Coldfield to the south. Development in this location would further emphasise the strategic separation role of land to the north of Sutton Coldfield.

- **Between Birmingham and Nuneaton i.e. Around New Arley (Location NS3)**³⁶

8.92 This is part of open countryside between the Birmingham conurbation and towns to the east (Atherstone, Nuneaton and Bedworth). There is no strategic Green Belt function across much of the extent of this locality (this limited to land in the vicinity of urban areas), the Green Belt consequently playing a supporting role.

8.93 In respect of identifying a broad Area of Search, whilst being a relatively remote location with no major road infrastructure, the rail corridor running through the north of New Arley - could in principle be the focus for development of a substantial scale, although the scale of infrastructure provision is a significant consideration.

³⁵ Area of Search No 10, Table 49, Figure 38

³⁶ Area of Search No 14, Table 49, Figure 38

8.94 Aside from areas of Ancient Woodland which could be protected, there are no nationally significant constraints. The presence of the rail corridor, connecting the Area to the conurbation helps to define a broad Area of Search around New Arley.

- **Between Birmingham and Coventry i.e. Around Balsall Common (Location NS4)** ³⁷

8.95 This land is part of the strategic gap between Birmingham and Coventry, although it contains significant development at Balsall Common where there is a station. The A452 Birmingham – Kenilworth road traverses the corridor northwest – southeast. Development would further narrow the gap between Birmingham and Coventry, although this would be towards its southern extent.

8.96 The potential scale and orientation of development in this location would need careful consideration given the route of the West Coast Mainline and HS2 which, from Balsall Common, will run broadly parallel to the A452.

8.97 This area is free from nationally significant constraints. There are small portions of Ancient Woodland and areas covered by Flood Zone 3 further afield however it is considered these could be mitigated, given the strategic nature of a new settlement. The presence of the railway corridor running north east-south west from the conurbation and a railway station at Balsall Common supports the potential for residential as well as employment development around this area.

- **Between Birmingham and Stratford upon Avon i.e. South of Birmingham (Location NS5)** ³⁸

8.98 This corridor is part of open countryside with small communities and associated stations strung along the Birmingham – Stratford upon Avon railway line: Wythall, Earlswood, The Lakes, Wood End, Danzey, Henley-in-Arden, Wootton Wawen and Wilmcote. The A3400 and the A4189 traverse the corridor. No effect on the strategic function of the Green Belt has been identified, and as with other locations of this nature, very substantial development would fundamentally alter the settlement pattern, locally and more generally, along this corridor.

8.99 In order to define a broad Area of Search for further consideration which sits within NS5, nationally significant constraints and the strategic transport network have been reviewed. The area around Wood End, Tanworth-in-Arden and Hockley Heath is largely free from nationally significant constraints with only small pockets of Ancient Woodland and areas of land covered by Flood Zone 3 identified.

8.100 Furthermore, the Stratford-upon-Avon to Birmingham rail corridor is in close proximity with stations at Danzey and Wood End. In addition, the M42 and M40 are circulated in close proximity, with the A3400 located to the south-east of this area connecting to the M40.

³⁷ Area of Search No 19, Table 49, Figure 38

³⁸ Area of Search No 21, Table 49, Figure 38

- **Between Birmingham and Bromsgrove/Redditch (Location NS6)³⁹**

- 8.101 The rail corridors between Birmingham and Bromsgrove and Birmingham and Redditch (shared until Barnt Green), whilst already containing some large villages, could, in principle, be the focus for extensive development, focused on public transport provision. Whether there is sufficient space for a development of this scale is uncertain. It is noted that parts of these corridors, particularly to the north around Barnt Green, are identified as making a Principal Contribution to Green Belt purposes, being part of the separation of Birmingham and Bromsgrove.
- 8.102 This area is only constrained by small parcels of Ancient Woodland. Aside from this, there are no nationally significant constraints. The area is situated on a rail corridor (Worcester-Birmingham) with stations nearby in Alvechurch (Red Lion) and Barnt Green (from Redditch). The area is also in close proximity to the M42.

Areas of Search for Urban Extensions

- 8.103 The scale of these developments (ranging from 1,500 to 7,500 dwellings) is such that they are likely to transform their receiving environment, creating a focus for homes, services and employment, and ideally complementing their parent urban area.

Table 46: Potential Urban Extension Broad Locations in Green Belt

Broad Location	Appendix B Green Belt Analysis Reference	Potential Effect of Strategic Function of the Green Belt	Potential Effect on Local Function of the Green Belt	Potential Constraints
To the south of Dudley (Location UE1)	South Sector pp.2-7	Part contains sprawl from built edge of Halesowen/Cradley	-	-
To the south of Penkridge (Location UE2)	North Sector pp.14-20		Southerly setting of Penkridge	-
The vicinity of Cannock, Great Wyrley, Burntwood, Brownhills and Aldridge (Location UE3)	North Sector pp.14-20	Complex urban edge with various instances of strategic separation and containment	Local separation of various settlements	-
To west/north west of Tamworth (Location UE4)	North East Sector pp.21-23	Part of the strategic gap between Tamworth and Birmingham	Local separation of various settlements	Flood risk?
To the south east of Redditch (Location UE5)	South Sector pp.24-27	-	Local separation of Studley?	Limited strategic infrastructure?

³⁹ Area of Search No 23, Table 49, Figure 38

- **To the south of Dudley (Location UE1)⁴⁰**

8.104 There is likely to be only a limited effect on the strategic function of the Green Belt in this location, given the high degree of containment by the A456 to the south. The area nevertheless retains some qualities of open countryside, despite progressive intrusion on the fringes, particularly from the east where there are examples of unbounded edges associated with past incremental additions to this part of Dudley. Development to the north and west at Cradley and Wollescote appears to be more contained by topography and watercourse features, although the development is still generally unbounded.

8.105 Aside from Green Belt, there are no nationally significant constraints around this area. The Area of Search would be situated around the urban edge of Dudley Borough in close proximity to the existing service centres and employment. The area is in close proximity to the A458 and a rail corridor to the west (Worcester – Birmingham).

- **To the south of Penkridge (Location UE2)⁴¹**

8.106 Part of the corridor between Wolverhampton and Stafford. Development in this area would have a limited effect on the strategic role of the Green Belt because of the containment of the conurbation to the south by the M54 and the absence of a strategic separation function. This area is almost entirely free from nationally significant constraints aside from small parcels of Ancient Woodland to the south east of Penkridge. The area is located on a rail corridor, albeit the nearest station is Penkridge. The area is thus adjacent to the urban edge of Penkridge in line with the spatial development models set out in Table 43, which provides a range of services.

8.107 For a larger scale development, the role of the Green Belt in this location could change such that it acquires a strategic separation role between a new development and Stafford to the north, Cannock to the east and Wolverhampton to the south. Note: the area is also identified as the potential location for a new settlement and it is unlikely that both could be accommodated.

- **The vicinity of Cannock, Great Wyrley, Burntwood, Brownhills and Aldridge i.e. North of Walsall around Brownhills (Location UE3)⁴²**

8.108 Whilst the Green Belt separates the various towns in this location, and more generally between Birmingham and Lichfield/Rugeley, there could be opportunities for accommodating various scales of development on the complex urban edges. Depending on the scale of development, there could be effective loss of strategic separation (and separate identity) of settlements, although the significance of this would have to be further considered given the current high degree of interconnection (functional and physical) between these areas. The broad location is also identified

⁴⁰ Area of Search No 20, Table 49, Figure 38

⁴¹ Area of Search No 2, Table 49, Figure 38

⁴² Area of Search No 11, Table 49, Figure 38

as holding potential for proportionate distribution of development, using the complex settlement edges.

8.109 This area is situated on the urban edge of Walsall District and is free from nationally significant constraints aside from small parcels of land covered by Flood Zone 3. The area falls within the Cannock Chase SAC 15km Zone of Influence however subject to further investigation, the potential impacts could be mitigated. The area is also in close proximity to the M6 Toll, A5 and A461.

- **To west/north west of Tamworth (Location UE4)⁴³**

8.110 The Birmingham & Fazeley Canal and River Tame form the broad western boundary of Tamworth, to the south of the A5 the distinction between town and country is less distinct. The A5 is a strong boundary feature which creates a division between western and southwestern areas which could hold potential for both significant development in the form of an urban extension and also more modest dispersed development. Development in this locality, whilst impinging on the strategic gap between Birmingham (at Sutton Coldfield) and Tamworth, would not significantly compromise the strategic role of the Green Belt in this location. Given the close relationship of a number of smaller settlements to the west of Tamworth (for example Fazeley, Mile Oak & Bonehill along with smaller villages such as Drayton Bassett), the issue of local separation and settlement identity would need to be scrutinised"

8.111 The area is situated on the north-western urban edge of Tamworth Borough and is free from nationally significant constraints aside from small parcels of Ancient Woodland. There are large areas covered by Flood Zone 3 adjacent to the Area of Search beyond the Green Belt however it is considered that an extension would mitigate any impact. The area is in close proximity to the A5 and A51 and is in relatively close proximity to Tamworth railway station.

- **To the south east of Redditch (Location UE5)⁴⁴**

8.112 Bordering open countryside to the southeast, development would have no effect on the strategic function of the Green Belt. Whilst largely being defined by the A435, the urban edge in this location is somewhat fragmented with various examples of historic and more modern development intruding into the rural hinterland. An appropriate scale of extension is uncertain at this stage and in any case would require the definition of an external boundary to limit sprawl into open countryside and potential issues with local coalescence (such as with Studley) to be addressed.

8.113 This area is not constrained by any nationally significant constraints, aside from a section of land covered by Flood Zone 3. There are a small number of Scheduled Ancient Monuments in close

⁴³ Area of Search No 9, Table 49, Figure 38

⁴⁴ Area of Search No 18, Table 49, Figure 38

proximity to the Area of Search. The area is situated on the urban edge of Redditch, in line with the development model criteria set out in Table 43, which provides a range of existing facilities.

Areas of Search for Employment-led Developments

- 8.114 These potential areas of search are related to current key employers or clusters of employment opportunities which have a strategic significance. Whilst there could be others, three areas have been identified where additional housing development (in the range 1,500 to 7,500 dwellings) could complement the provision of existing jobs, in principle helping to reduce commuting.

Table 47: Potential Employment-Led Strategic Development Locations in Green Belt

Broad Location	Appendix B Green Belt Analysis Reference	Potential Effect of Strategic Function of the Green Belt	Potential Effect on Local Function of the Green Belt	Potential Constraints
North of Wolverhampton, in the vicinity of i54 South Staffordshire (M54, J2) (Location E1)	West Sector pp.8-13 North Sector pp.14-20	Complex urban edge/transport corridor with various instances of strategic containment	Local separation between Codsall/Bilbrook and Wolverhampton?	Limited space?
In the vicinity of Coleshill and Minworth (M42, J9) (Location E2)	North East Sector pp.21-23	Complex urban edge/transport corridor with various instances of strategic containment	Local separation between Coleshill and Birmingham	Limited space? Flood risk issues? Route/effect of HS2?
In the vicinity of Birmingham Airport & the NEC (M42, J6) (Location E3)	South East Sector pp.24-27	Complex urban edge/transport corridor with various instances of strategic containment	-	Limited space? Route/effect of HS2/UK Central Hub proposals?

- **North of Wolverhampton, in the vicinity of i54 South Staffordshire (M54, J2) (Location E1)**⁴⁵

- 8.115 This is a complex area defined by major road infrastructure (M54 and A449 and the Wolverhampton – Stafford railway to the east. Whilst having an overall limited likely significant strategic effect on the Green Belt in this location (the M54 acting as a generalised northern edge to the conurbation), there are potentially local separation issues in what is part of a complex urban area and transport corridor. In addition, should development extend north of the M54, to consolidate that already around Featherstone, for example, then role of the Green Belt between Wolverhampton and Stafford would acquire a strategic separation function.

- **In the vicinity of Coleshill and Minworth (M42, J9) i.e. East of Birmingham (Location E2)**⁴⁶

- 8.116 This area is part of a complex urban edge and transport corridor to the north east of Birmingham where the distinction between town and country has become indistinct. Additional development would potentially impinge upon the strategic role of the Green Belt, the land broadly separating Birmingham and Tamworth lying to the north of this area. However, the character of the area, being dissected by roads, railways and various forms of industrial development, could lend itself to the redefinition of development boundaries in the locality as part of new development.

⁴⁵ Area of Search No 24, Table 49, Figure 38

⁴⁶ Area of Search No 13, Table 49, Figure 38

- **In the vicinity of Birmingham Airport & the NEC (M42, J6) (Location E3)⁴⁷**

8.117 This is a much-intruded part of the Green Belt to the east of Birmingham, being part of a complex urban edge and transport corridor which has created various parcels of land with varying degrees of openness. The land is strategically part of the gap between Birmingham and Coventry, and development would by definition compromise this to a degree. However, the strategic gap is a substantial one, and the area includes the corridor of HS2 which could present opportunities for defining the edge of the conurbation. The location is also identified as holding potential for an urban extension.

Proportionate Dispersal

8.118 This type of development (500 to 2,500 dwellings, either on a single site or cluster of sites in a local area), or indeed perhaps smaller scale development schemes, is most appropriate to complex settlement edges where the strategic role of the Green Belt is less coherent, allowing for localised infill and rounding off. As with the siting of other development models, detailed appraisal of the likely effect on the local role of the Green Belt would have to be undertaken. Seven areas where this type of development could be accommodated without significantly compromising the strategic function of the Green Belt have been identified. These areas vary in geographical scale considerably, reflecting the detail of local geography.

Table 48: Potential Proportionate Dispersal Locations in Green Belt

Broad Location	Appendix B Green Belt Analysis Reference	Potential Effect of Strategic Function of the Green Belt	Potential Effect on Local Function of the Green Belt	Potential Constraints
The western edge of the conurbation between Stourbridge and Wolverhampton (Location PD1)	West Sector pp.8-13	Complex urban edge with various examples of strategic containment	Examples of local separation e.g. at Wombourne	-
To the north of Codsall/Bilbrook (Location PD2)	West Sector pp.8-13	-	-	-
The vicinity of Cannock, Great Wyrley, Burntwood, Brownhills and Aldridge (Location PD3)	North Sector pp.14-20	Complex urban edge with various instances of strategic separation and containment	Local separation of various settlements	-
To the west / southwest of Tamworth (Location PD4)	North East Sector pp.21-23	Part of the strategic gap between Tamworth and Birmingham	-	Flood risk?
To the south of Birmingham around Hollywood, Whitlock's End and Cheswick Green (Location PD5)	South Sector pp.2-7	Some examples of strategic containment, also part of the strategic gap between Birmingham and Redditch	Local separation of settlements	-
To the south and southeast of Redditch (Location PD6)	South Sector pp.2-7	-	Local separation of Studley?	-

⁴⁷ Area of Search No 22, Table 49, Figure 38

To the south of Bromsgrove (Location PD7)	South Sector pp.2-7	Part of the strategic gap between Bromsgrove and Droitwich	Local separation of Stoke Prior?	-
--	---------------------	--	----------------------------------	---

8.119 These areas are considered below. Local green belt studies may define additional potential development sites in the Green Belt both within and beyond these areas.

- **The western edge of the conurbation between Stourbridge and Wolverhampton (Location PD1)**

8.120 There would be a limited likely overall strategic effect on Green Belt function associated with the rounding-off and development to appropriate boundaries from what is currently an artificial edge (i.e. where development has been halted at the administrative boundary) in many locations. The opportunities for accommodating development of this type are likely to vary significantly across this extensive edge which often borders open countryside, extending across Staffordshire and into Shropshire. There is limited strategic infrastructure in this location, which combined with a general absence of substantial boundaries which could be used to contain significant development, makes proportionate dispersal the most appropriate locational model. The potential for proportionate dispersal development in the Sandwell Valley, east of Walsall, requires detailed consideration.

- **To the north of Codsall/Bilbrook (Location PD2)**

8.121 There would be a limited likely significant strategic effect in this location, being part of edge-of-conurbation development which is generally well contained. There are containment (and local separation) issues to the east of Codsall (as both opportunities and challenges) which would have to be considered as part of any detailed local assessment.

- **The vicinity of Cannock, Great Wyrley, Burntwood, Brownhills and Aldridge i.e. North of Walsall around Brownhills (Location PD3)**

8.122 Whilst the Green Belt in this location separates the various towns from one another, and more generally between Birmingham and Lichfield/Rugeley, there could be opportunities for accommodating various scales of development on the complex urban edges which characterise the area. Given the character of the settlement pattern, significant compromise to the strategic function of the Green Belt is unlikely with this kind of development, although the issue of local separation and settlement identity would need to be scrutinised.

- **To the west / southwest of Tamworth (Location PD4)**

8.123 Smaller scale development would have a limited effect on the strategic function of the Green Belt in this location, despite being to the south of the A5 part of the strategic gap between Tamworth and

Birmingham (at Sutton Coldfield). To the south of the A5 in particular, there is a generally poorly defined urban edge with opportunities for various small-scale 'rounding off'.

- **To the south of Birmingham around Hollywood, Whitlock's End and Cheswick Green (Location PD5)**

8.124 Whilst in part having a strategic role in broadly containing the southern edge of Birmingham, there is a complex settlement pattern which has seen the incremental growth of both the larger settlements and smaller ones across the area resulting in an urbanised character. The introduction of smaller scale additional development is unlikely to compromise the overall strategic role of the Green Belt in this location, although detailed local appraisal would be required to determine settlement-specific effects and potential to accommodate change.

- **To the south and southeast of Redditch (Location PD6)**

8.125 Bordering open countryside to the southeast, development would have no significant effect on the strategic function of the Green Belt, although there could be local sensitivities which would need to be explored, including local separation between Redditch and adjacent settlements. Whilst largely being defined by the A435, the urban edge in this location is somewhat fragmented as a result of both historic and more modern development.

- **To the south of Bromsgrove (Location PD7)**

8.126 There is a complex development pattern associated with the corridor between Bromsgrove and Droitwich, including a substantial business park. Whilst being broadly part of the strategic separation of Bromsgrove and Droitwich, additional modest development, through rounding-off the edges of development, for example, would not overall compromise the strategic function of the Green Belt in this location, although local sensitivities which would need to be explored, including local separation between Bromsgrove and adjacent settlements.

Conclusions

Fulfilment of Green Belt Purposes

- 8.127 The assessment of the strategic role of the Green Belt in the West Midlands has identified where Green Belt purposes (containing the sprawl of large built-up areas, preventing the merger of towns, safeguarding the countryside from encroachment and preserving the setting of historic towns), as set out in the NPPF are being met. Individual purposes are mapped.
- 8.128 Strategically, checking unrestricted sprawl of large built up areas and maintaining separation between towns, it can be argued, are key purposes which can be combined to produce a composite map which shows a two-fold division into areas making a Principal Contribution and those making a Supporting Contribution to Green Belt purposes.
- 8.129 The broad areas identified as making a Principal Contribution to Green Belt purposes are:
- between Birmingham and Coventry (around Balsall Common)
 - between Birmingham and Tamworth
 - immediately to the north of Birmingham
 - at various locations between Birmingham, Cannock, Brownhills/Burntwood/Aldridge and Lichfield
 - south west of Dudley between Dudley and Kidderminster and north of Wolverhampton
 - between Birmingham and Kidderminster
 - between Birmingham and Bromsgrove/Redditch
- 8.130 The remainder of the Green Belt makes a Supporting Contribution by virtue of safeguarding the open countryside from encroachment, specifically related to the edge of a built-up area or more generally though preventing incremental change in remoter areas, where development would damage their character. In this way, Green Belt policy, viewed strategically, enables the systematic and consistent application of development restraint, ensuring both the strategic containment of development at the edges of built-up areas, and its wider supporting context.
- 8.131 There are various examples of the Green Belt performing a more local role in terms of the prevention of the coalescence of settlements which cannot be classed as large built-up areas, as well as containing localised sprawl from smaller settlements which could be damaging to the openness of the countryside.
- 8.132 Detailed local analysis of the fulfilment of Green Belt purposes should be considered alongside this work, particularly in respect of the relationship between the Green Belt and specific settlement

edges. Some studies have already been completed where detailed fieldwork will have been carried out⁴⁸.

Potential Areas of Search

- 8.133 The strategic analysis of potential locations for various types of development reveals opportunities for more detailed consideration in light of the overall development requirement. The strategic transport network and nationally significant constraints have been used to help draw broad Areas of Search and these are presented alongside those beyond the Green Belt in Table 49 and Figure 38 in Chapter 9.
- 8.134 The Areas of search identified include areas making a Principal Contribution to Green Belt purposes. In these cases, because of the nature of existing development, local geography and locational guidance identified in the NPPF, these can still be considered as potential Areas of Search. Their early exclusion could mean a significant missed opportunity for achieving a balanced planning outcome across the study area.
- 8.135 As part of taking forward any of the proposed Areas of Search, additional detailed scrutiny of both the strategic and local effects on the role of the Green Belt would be required, as well as the application of sustainability and landscape considerations.

⁴⁸ See for example studies undertaken for Solihull, Stratford upon Avon, Warwick, North Warwickshire, Coventry, Tamworth, South Staffordshire, Lichfield and Cannock Chase.

9 REVIEW OF POTENTIAL STRATEGIC DEVELOPMENT LOCATIONS

- 9.1 Chapters 7 and 8 have identified a number of potential Areas of Search for Strategic Development. This section of the report moves on to provide a comparative assessment of the locations/ areas of search.
- 9.2 The NPPF sets out that local planning authorities should seek opportunities to achieve sustainable development including net gains across each of the economic, social and environmental dimensions, and avoid significantly adverse impacts wherever possible. Plans should set out locations for strategic development. They also need to be deliverable.
- 9.3 The latter sections of this report are particularly dealing with potential Areas of Search for strategic development. By their nature, strategic development locations will be able to deliver some infrastructure and local services alongside new development. Given the nature of the Study, the focus of this section is on assessing potential Areas of Search for Strategic Development. It provides an initial comparative consideration of these, in terms of their strategic accessibility, relationship to meeting housing need, sustainability, and deliverability. The analysis is strategic and high level in nature, and inevitably further more detailed assessment would need to be taken forward through the preparation of individual local plans and to support allocations therein.
- 9.4 Addressing the housing need shortfall will require a blend of different forms of development, with intensification within urban areas, smaller scale development schemes (in line with the Proportionate Dispersal model) and larger strategic development all playing a role. However for the purposes of this cross-boundary strategic study, the focus has been on identifying potential strategic development locations.

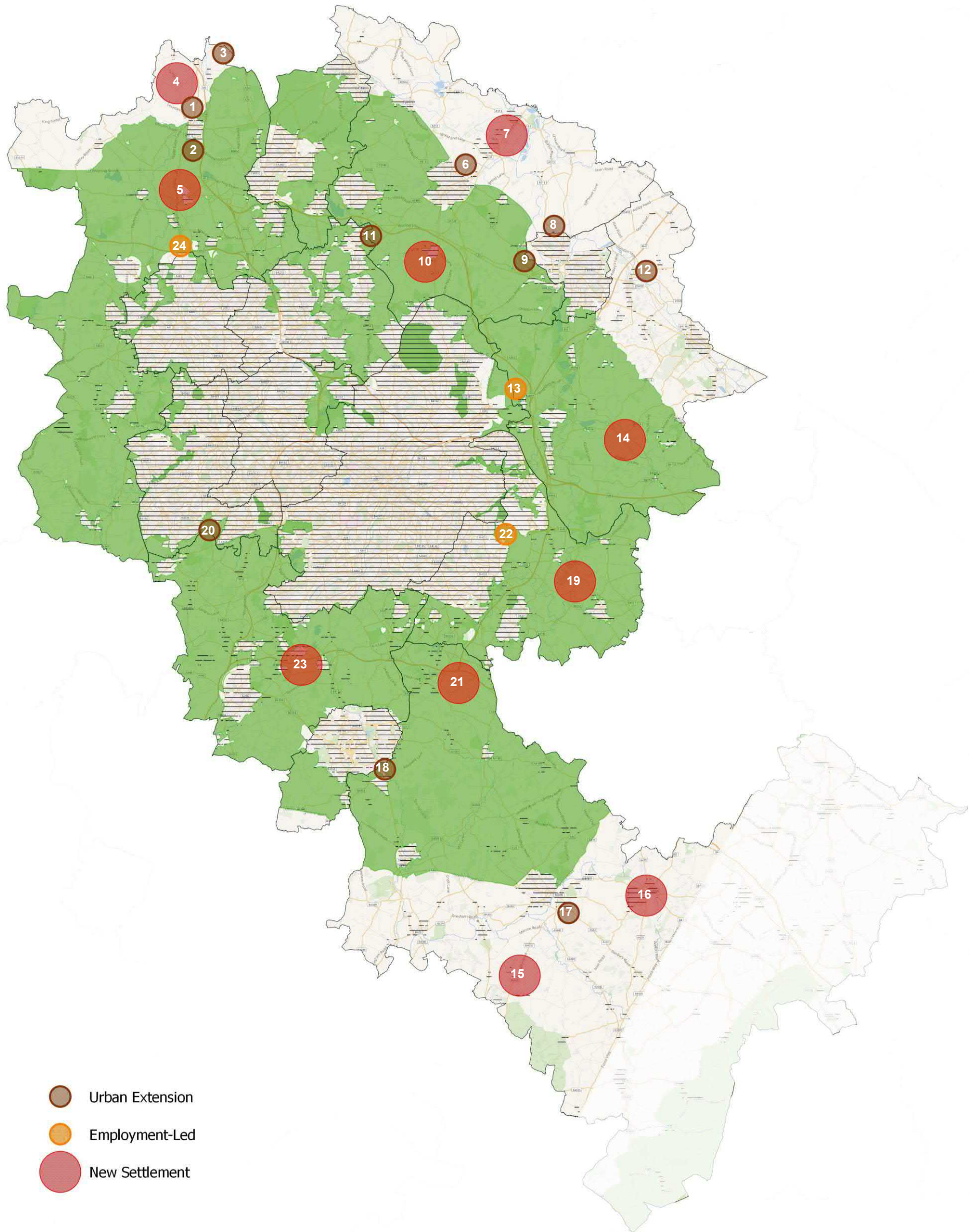
The Strategic Development Locations

- 9.5 Twenty four Areas of Search have been identified as possible broad locations that could meet the demand for housing. Figure 38 and Table 49 present the Areas of Search identified through Chapters 7 and 8.

Table 49: Areas of Search – Beyond Green Belt & Green Belt

No	Area of Search	Authority	Growth Option
1	North of Penkridge	South Staffordshire	Urban Extension
2	South of Penkridge	South Staffordshire	Urban Extension
3	South of Stafford	South Staffordshire	Urban Extension
4	Around Dunston	South Staffordshire	New Settlement
5	Between Wolverhampton and Penkridge	South Staffordshire	New Settlement
6	East of Lichfield	Lichfield	Urban Extension
7	Around Fradley & Alrewas	Lichfield	New Settlement
8	North of Tamworth	Lichfield	Urban Extension
9	North west of Tamworth	Lichfield	Urban Extension
10	Around Shenstone	Lichfield	New Settlement
11	North of Walsall around Brownhills	Walsall, Lichfield and Cannock Chase	Urban Extension
12	East of Polesworth	North Warwickshire	Urban Extension
13	East of Birmingham	North Warwickshire	Employment-Led
14	Around New Arley	North Warwickshire	New Settlement
15	South west of Stratford-on-Avon District	Stratford	New Settlement
16	Around Wellesbourne	Stratford	New Settlement
17	South of Stratford-upon-Avon town	Stratford	Urban Extension
18	South east of Redditch	Stratford	Urban Extension
19	Around Balsall Common	Solihull	New Settlement
20	South of Dudley	Dudley	Urban Extension
21	South of Birmingham	Stratford	New Settlement
22	Birmingham Airport & NEC	Solihull	Employment-Led
23	Between Birmingham and Bromsgrove/Redditch	Bromsgrove	New Settlement
24	North of Wolverhampton	South Staffordshire	Employment-Led
25	South of Birmingham Airport	Solihull	Urban Extension

Figure 38: Areas of Search for Strategic Development



Assumptions on Social and Community Infrastructure

9.6 The table below sets out the consultancy team's assumptions on social and community infrastructure which would be supported by each of the strategic development models.

Table 50: Social and Community Infrastructure Assumptions for Development Models

Development Model	Infrastructure Assumptions
Urban Extensions	<ul style="list-style-type: none"> Assumed that development contains mixed-tenure homes and housing types. Assumed that development contains employment land provision. At lower end of the development range, the additional demand for health service needs met through increasing GPs/nurses in existing medical centres, supported by developer contributions. At development scale above 3,500 dwellings, it is assumed that the provision of a new medical practice would be needed. Assumed that development will include the provision of primary school(s) when above 2,500 dwellings. At high end of the development range, assumed that the development would also include a secondary school. Provision at lower range dependent on capacity and proximity of existing provision. Where no direct provision in the development, assumed additional educational demand met through developer contributions to existing primary and secondary schools. Assumed that development will include local centre(s) for provision of everyday convenience shopping needs and basic services. Assumed that the development will include the provision of recreational and sporting facilities (excluding swimming pool) within the urban extension at middle and higher development range. Assumed that the development will include comprehensive green infrastructure on site.
Employment Areas	<ul style="list-style-type: none"> Potential for provision of local centre to meet convenience shopping needs.
Proportionate Dispersal	<ul style="list-style-type: none"> Assumed that development contains mixed-tenure homes and housing types. Assumed that the additional demand for health service needs met through increasing GPs/nurses in existing medical centres, supported by developer contributions. Assumed that additional educational demand met through developer contributions to existing primary and secondary schools. Assumed that development will include local centre(s) for provision of everyday convenience shopping needs towards middle and higher quantum of housing provision. Assumed that the development includes green infrastructure provision in line with quantum of development. Assumed that the development includes the provision of recreational facilities to meet needs related to the quantum of development.
New Towns/Settlements	<ul style="list-style-type: none"> Assumed that development contains mixed-tenure homes and housing types. Assumed that development contains employment land provision sufficient to meet aspiration of self-containment. Assumed that development will include integrated health care practice or practice(s). Assumed development will include provision of primary school(s) and secondary school. Assumed development will include provision of local centres to meet everyday convenience shopping needs and provision of 'town centre' incorporating a range of comparison and convenience stores. Assumed development will provide facilities for community/cultural activities. Assumed that development would uses zero-carbon and energy-positive technologies. Assumed that development will provide co-ordinated recreational and sporting facilities (including a swimming pool) that meet the needs of the development. Assumed delivery of comprehensive green infrastructure within the new settlement.

Relationship to Unmet Need

- 9.7 An important consideration in determining the suitability of potential strategic development locations is the geographical proximity of these locations to the unmet housing need. This is the first of five considerations in identifying a set of preferred options for strategic development.
- 9.8 Whilst there has historically been a modest unmet need arising from Tamworth and Cannock Chase, the major strategic unmet need within the HMA arises from Birmingham, with a land supply shortfall from the Black Country Authorities, i.e. the Conurbation.
- 9.9 In order to establish the performance of an Area of Search in relation to the ability for each Area to meet the unmet housing need, we have set the following parameters which deal with the distance from the conurbation – see Table 51 below.

Table 51: Relationship to Unmet Need – Criteria

Distance Threshold		Ability to Meet the Need
0	<2.5km	Directly addresses substantial proportion of the need
>2.5km	<5km	Helps to meet significant proportion of the need
>5km	<10km	Helps to meet reasonable proportion of the need
>10km	<15km	Likely to meet only some of the need
>15km		Unlikely to address the need

- 9.10 GL Hearn considers therefore that the geographical relationship of Areas of Search for strategic development and the Conurbation is an important consideration in assessing the relative merits of different potential Areas of Search. We have therefore assessed Areas of Search in respect of their geographical proximity to the conurbation.
- 9.11 The results of undertaking this exercise are shown below in Table 52 in which each Area of Search is paired with a distance threshold from the conurbation, which relates to its ability to meet the unmet need.

Table 52: Ability to Meet Unmet Need – Results

No	Area of Search	Type	Distance (km)	Threshold (km)
24	North of Wolverhampton	Employment-Led	0	<2.5
22	South of Birmingham Airport around the NEC	Employment-Led	0	<2.5
20	South of Dudley	Urban Extension	0.7	<2.5
13	East of Birmingham	Employment-Led	1.8	<2.5
23	Between Birmingham & Bromsgrove/Redditch	New Settlement	2.7	<5.0
5	Between Wolverhampton and Penkridge	New Settlement	3.5	<5.0
10	Around Shenstone	New Settlement	3.9	<5.0
19	Around Balsall Common	New Settlement	4.4	<5.0
21	South of Birmingham	New Settlement	4.7	<5.0
11	North of Walsall around Brownhills	Urban Extension	5.7	<10.0
9	North West of Tamworth	Urban Extension	6.6	<10.0
14	Around New Arley	New Settlement	8.0	<10.0
2	South of Penkridge	Urban Extension	8.5	<10.0
8	North of Tamworth	Urban Extension	9.5	<10.0
6	East of Lichfield	Urban Extension	10.2	<15.0
1	North of Penkridge	Urban Extension	10.4	<15.0
18	South East of Redditch	Urban Extension	12.5	<15.0
4	Around Dunston	New Settlement	13.3	<15.0
12	East of Polesworth	Urban Extension	13.5	<15.0
7	Around Fradley & Alrewas	New Settlement	14.9	<15.0
3	South of Stafford	Urban Extension	15.3	>15.0
17	South of Stratford-upon-Avon town	Urban Extension	23.7	>15.0
16	Around Wellesbourne	New Settlement	24.4	>15.0
15	South West of Stratford-on-Avon District	New Settlement	28.2	>15.0

9.12 A number of Areas of Search perform relatively well in respect of meeting the unmet need of the conurbation, including employment-led areas i54, South of Birmingham Airport and East of

Birmingham, with all located on the fringe of the conurbation. An urban extension to the South of Dudley would also perform well in meeting the unmet need.

- 9.13 Five potential new settlements would also help to meet a significant proportion of the need including Between Birmingham and Bromsgrove/Redditch; Between Wolverhampton and Penkridge; Around Balsall Common; Around Shenstone and South of Birmingham.
- 9.14 In contrast, Areas of Search South of Stafford; South of Stratford-upon-Avon town; the Wider Wellsbourne Area and South West of Stratford-on-Avon District would perform less well in terms of their ability to meet the unmet need, given that these Areas are situated over 15km from the conurbation.

Sustainability Appraisal

- 9.15 To inform decisions on which strategic development locations should be taken forward for further testing, a high level Sustainability Appraisal (SA) has been undertaken of the development models and broad areas of search (AoS) which have been identified as possible options for meeting this demand.
- 9.16 A strategic sustainability appraisal framework matrix was developed (which was consulted on with stakeholders in the HMA group) which details the SEA themes, objectives, decision making criteria, strategic locational indicators and assumptions that are to be used. This has been used to appraise the 4 development models and the 24 broad areas of search that have been identified.
- 9.17 Table 53 below shows the scoring system which has been used to undertake the SA.

Table 53: Sustainability Appraisal Scoring System

+++	Significant Positive Outcome
++	Major Positive Outcome
+	Minor Positive Outcome
0	Neutral Outcome
-	Minor Negative Outcome
--	Major Negative Outcome
---	Significant Negative Outcome
?	Uncertain Outcome

- 9.18 The full SA framework is included at Appendix C.

Assessment of Development Models

9.19 Appendix E sets out the results of the SA of the four development models. Table 54 below provides a summary table showing the results.

9.20 The four development models have similar effects on some of the SA objectives, particularly in relation to natural resources and overall on economic growth, although for urban extensions and proportionate dispersal the extent of positive effects is reduced reflecting that the urban extension model would not support economic self-containment in the settlement with residents likely to commute elsewhere for higher level services and employment and that for the proportionate development model would not support employment land development. On the other hand, the Employment led model is considered to support existing strategic employment locations, therefore having a significant positive effect.

Table 54: Results of the SA of the Development Models

SA Objective	New Town/Settlement	Urban Extension	Employment Areas	Proportionate Dispersal
Natural Resources and Waste	+/--	+/--	+/--	+/-
Contribute to Climate Change Mitigation	+++	++	++	+
Adapt to the Effects of Climate Change	+++/--	++/-	++/-	-
Transport, Connectivity and CO ₂ Emissions	+++/--	++/--	++/-	-/?
Historic Environment, Landscape, Biodiversity and Geodiversity	++/--	+/-	+/-	0/?
Pollution	++/--	++/--	++/--	-/?
Economic Growth	+++	++	+++	+
Communities, Healthy Lifestyles and Equality	+++	++	++	+/-
Housing	+++	++	++	+

9.21 The development models would have varying positive effects on the housing objective. This reflects that the quantum of housing envisaged in the new town/settlement development model would make a significant contribution to meeting the housing needs of the HMA, with lesser contributions from urban extensions, employment led and proportionate dispersal.

9.22 Small scale proportionate dispersal and other small sites have the potential to be very sustainable through making best use of existing infrastructure and resources, and enhancements where necessary. Completed matrices for the four development models are included in **Appendix B**.

Assessment of Areas of Search

9.23 There are 24 Areas of Search (AoS) for strategic development which have been appraised. In summary these are:

- **10 new settlements/towns:** around Dunston, between Wolverhampton and Penkridge, Fradley and Alrewas, Shenstone, New Arley/Old Arley, South west of Stratford-on-Avon District, Around Wellesbourne, Balsall Common; South of Birmingham and Between Birmingham and Bromsgrove/Redditch;
- **11 urban extensions:** North of Penkridge, South of Penkridge, South of Stafford, East of Lichfield, North of Tamworth, North West of Tamworth, North of Walsall, East of Polesworth, South of Stratford-upon-Avon town, South East of Redditch and South of Dudley; and
- **3 employment:** In the vicinity of i54, to the north of Wolverhampton (M54, J2), East of Birmingham (M42, J9), and In the vicinity of Birmingham Airport & the NEC (M42, J6).

New Settlements/Towns

9.24 Table 55 provides a summary table showing the results of the SA of the 10 New Town/Settlements Areas of Search.

9.25 The 10 new town/settlements overall perform similarly against the SA objectives. However, there are some locational differences, for example Balsall Common and South of Birmingham perform better against the economic growth objective due to accessibility to the motorway network and thus enabling better accessibility of major employment areas. Fradley and Alrewas is located where there are a number of areas at highest risk of flooding so scores negatively in part against the climate change mitigation objective.

9.26 For the communities, healthy lifestyles and equality objective, New Arley/Old Arley, South west of Stratford-on-Avon District and Around Wellesbourne only have major, rather than significant positive effects and the two airfields also have some uncertain effects due to their being no existing higher level service centres in these locations. These locations also have some uncertain impacts in relation to housing as significant transport infrastructure investment would be required.

Urban Extensions

9.27 Table 56 provides a summary table showing the results of the SA of the Areas of Search for Urban Extensions.

- 9.28 There are only marginal differences between the Urban Extension AoS. These relate to some uncertain impacts around climate change mitigation (due to areas of flood zone 3 North and North West of Tamworth and South of Stratford-upon-Avon town) and no negative impacts in relation to economic growth (North of Tamworth and South East of Redditch have particularly good access to local employment opportunities).
- 9.29 The effects on the environment and landscape are a mixture of minor positive and negative, reflecting opportunities for enhancements but that inevitably deliver the scale of development envisaged there will be loss of Greenfield land. The pollution impacts are a mixture of major positive and negative, reflecting opportunities to promote and increase sustainable modes of transport but also significant growth in car use.
- 9.30 Each of the urban extension AoS have equally significant positive effects on communities, healthy lifestyles and equality, and housing reflecting major opportunities through urban extensions to provide for example green infrastructure and new sporting facilities and to deliver a range of housing types and tenure.

Table 55: Results of the SA of the New Town/Settlement Areas of Search

SA Objective	Around Dunston	Between Wolverhampton and Penkridge	Around Fradley and Alrewas	Around Shenstone	Around New Arley/Old Arley	South west of Stratford-on-Avon District	Around Wellesbourne Area	Around Balsall Common	South of Birmingham	Between Birmingham and Redditch/Bromsgrove
Natural Resources and Waste	+/--	+/--	+/--	+/--	+/--	+/--	+/--	+/--	+/--	+/--
Contribute to Climate Change Mitigation	+++	+++	++/--	+++	+++	+++	+++	+++	+++	+++
Adapt to the Effects of Climate Change	+++/--	+++/--	+++/--	+++/--	+++/--	+++/--	+++/--	+++/--	+++/--	+++/--
Transport, Connectivity and CO ₂ Emissions	+++/--	+++/--	+++/--	+++/--	++/--	++/--	++/--	+++/--	+++/--	+++/--
Historic Environment, Landscape, Biodiversity and Geodiversity	++/--	++/--	++/--	++/--	++/--	++/--	++/--	++/--	++/--	++/--
Pollution	++/--	++/--	++/--	++/--	+/--	++/--	++/--	++/--	++/--	++/--
Economic Growth	+++/-	+++/-	+++/-	+++/-	+++/-	+++/-	+++/-	+++	+++	+++
Communities, Healthy Lifestyles and Equality	+++	+++	+++	+++	++	++/?	++/?	+++	+++	+++
Housing	+++	+++	+++	+++	+++/?	+++/?	+++/?	+++	+++	+++

Table 56: Results of the SA of the Urban Extension Areas of Search

SA Objective	North of Penkridge	South of Penkridge	South of Stafford	East of Lichfield	North of Tamworth	North West of Tamworth	North of Walsall around Brownhills	East of Polesworth	South of Stratford-upon-Avon Town	South East of Redditch	South of Dudley
Natural Resources and Waste	+/--	+/--	+/--	+/--	+/--	+/--	+/--	+/--	+/--	+/--	+/--
Contribute to Climate Change Mitigation	++	++	++	++	++/?	++/?	++	++	++/?	++	++
Adapt to the Effects of Climate Change	++/-	++/-	++/-	++/-	++/-	++/-	++/-	++/-	++/-	++/-	++/-
Transport, Connectivity and CO ₂ Emissions	++/--	++/--	++/--	++/-	++/-	++/-	++/-	++/--	++/--	++/--	++/--
Historic Environment, Landscape, Biodiversity and Geodiversity	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-
Pollution	++/--	++/--	++/--	++/--	++/--	++/--	++/--	++/--	++/--	++/--	++/--
Economic Growth	++/-	++/-	++	++/-	++	++/-	++/-	++/-	++/--	++	++/-
Communities, Healthy Lifestyles and Equality	++	++	++	++	++	++	++	++	++	++	++
Housing	++	++	++	++	++	++	++	++	++	++	++

Employment

9.31 Table 57 provides a summary table showing the results of the SA of the three Employment Led Areas of Search.

Table 57: Results of the SA of the Employment Led Areas of Search
SA Objective

	North of Wolverhampton, around I54	East of Birmingham	South of Birmingham Airport & NEC
Natural Resources and Waste	+/-	+/-	+/-
Contribute to Climate Change Mitigation	++	++/?	++
Adapt to the Effects of Climate Change	++/-	++/-	++/-
Transport, Connectivity and CO₂ Emissions	++/-	++/-	++/-
Historic Environment, Landscape, Biodiversity and Geodiversity	+/-	+/-	+/-
Pollution	++/--	++/--	++/--
Economic Growth	+++	+++	+++
Communities, Healthy Lifestyles and Equality	++	++	++/?
Housing	++	++	++

9.32 The employment led AoS perform similarly against the SA objectives. The only areas of difference reflect some uncertainty in relation to climate change mitigation for East of Birmingham around Coleshill AoS (due to areas of flood zones 2 and 3) and in relation to the communities, health lifestyles and equality for South of Birmingham Airport & the NEC AoS (due to uncertainty relating to the impacts of the airport on future residents).

9.33 The complete SA matrices for each AoS are included in **Appendix D**.

Overall Findings from the SA

9.34 Overall, there are only marginal differences between locations for the different types of development model, which reflect location and key constraints, such as the prevalence of areas at highest risk of flooding. However, it is notable that there are some more negative effects for some of the objectives reflecting that there would likely be fewer opportunities through the employment and proportionate dispersal models to deliver environmental enhancements to mitigate any potential adverse environmental effects.

9.35 For the AoS appraisal there are overall marginal differences between different AoS reflecting locational issues. For example, the urban extension south of Stratford-upon-Avon town scores more negatively against the economic development objective due to its distance to employment compared to the other urban extensions, the Fradley & Alrewas new settlement location is more affected by flood risk than other new settlements locations and that some urban extensions and new settlements are better located for access to sustainable modes of transport than others.

9.36 The SA indicates that:

- All score positively for the housing, healthy and employment objectives, albeit that for the proportionate dispersal model there are likely to be few opportunities to deliver comprehensive green infrastructure provision, particularly at the lower end of the quantum of development envisaged in the development model, and so the opportunities to reinforce a sense of place are therefore limited;
- Some score less well for some of the environmental objectives (depending on the proximity to constraints - for example some areas have larger areas of flood zone 3);
- Significance of the effects reflects the scale of the development envisaged;
- There are only marginal differences between locations for the different types of development model and AoS (these reflect location and key constraints). However, it is notable that there are some more negative effects for some AoS (the urban extension south of Stratford-upon-Avon town for example scores more negatively against the economic development objective due to its distance to employment compared to the other urban extensions, the Fradley & Alrewas new settlement location is more affected by flood risk than other new settlements locations and that some urban extensions and new settlements are better located for access to sustainable modes of transport than others);
- There would be less opportunities through the employment and proportionate dispersal models to secure environmental enhancements to mitigate potentially adverse impacts, for example in relation to green infrastructure provision, flood risk mitigation or biodiversity enhancements; and
- The sequencing of infrastructure will be important to realise full sustainable benefits.

Public Transport

9.37 At a strategic level, we consider it is important to further our understanding of the existing public transport network in the Areas of Search, focussing primarily on the distance to rail stations and the associated journey time to Birmingham New Street/Snow Hill as the centre of the conurbation.

9.38 In order to understand how each Area of Search performs under this category, we have established criteria in relation to distance to the nearest train station and the journey time from this station to the centre of Birmingham, as the largest employment centre in the sub-region, as follows:

Table 58: Public Transport – Criteria

Distance (km)	Journey (mins)	Public Transport
<2	<20	Adjacent to a public transport hub i.e. train station and short travel time
<2	>20, <30	Adjacent and reasonable travel time
>2, <4	30-40	Within reasonable walking distance
		Further away from hub with longer travel time
4+ or no station	40+	No train station or at some distance from hub

9.39 The results of undertaking this exercise are shown below in Table 59; where each Area of Search is assessed in accordance with the proximity to the nearest train station and associated journey time to the centre of Birmingham.

Table 59: Public Transport – Results

No	Area of Search	Distance (km)	Journey Time (mins)
Urban Extensions			
1	North of Penkridge	1.5	32
2	South of Penkridge	1.5	32
3	South of Stafford	3	33
6	East of Lichfield	2	32
8	North of Tamworth	2	20
9	North West of Tamworth	3.5	20
11	North of Walsall around Brownhills	8.5	23
12	East of Polesworth	-	-
17	South of Stratford-upon-Avon town	1.5	50
18	South East of Redditch	4.5	50
20	South of Dudley	5	40
New Settlements			
4	Around Dunston	4.5	32
5	Between Wolverhampton and Penkridge	6.5	32
7	Around Fradley & Alrewas	4	40
10	Around Shenstone	1	30
14	Around New Arley	-	-
15	South West of Stratford-on-Avon District	-	-
16	Around Wellesbourne	-	-
19	Around Balsall Common	2	20
21	South of Birmingham	1	30
23	Between Birmingham and Bromsgrove/Redditch	1	35
Employment-Led			
22	South of Birmingham Airport & the NEC	1	10
13	East of Birmingham	1.5	15
24	North of Wolverhampton	5	15

9.40 A number of the Areas of Search perform well, as areas which are adjacent to train stations with a short journey time including the employment-led areas East of Birmingham around Coleshill where the nearest station is around 1.5km away and the journey time is only 15 minutes; and South of

Birmingham Airport & the NEC where the nearest station is around 10 minutes away where services reach Birmingham New Street in only 10 minutes.

- 9.41 Better performing Areas considered for Urban Extensions include North of Tamworth (2km distance and 20 minute journey) and South of Dudley (2km and 30 minute journey). A number of the New Settlement areas perform well including Around Shenstone (1km distance and 30 minutes journey) and Around Balsall Common (2km distance and 20 minutes journey).
- 9.42 Areas which do not have a station or are at a disadvantage due to longer journey times, such as East of Polesworth, Around New Arley, South West of Stratford-on-Avon District and the Wider Wellesbourne Area, perform poorly.

Deliverability

Potential Highways, Utilities and Waste Water Infrastructure Requirements

- 9.43 It is important to understand the relationship between the potential scale of development and the potential scale of infrastructure required i.e. what is the scale of infrastructure likely to be required to support development of urban extensions and new settlements.
- 9.44 CAPITA, as commissioned by GL Hearn, has undertaken a high-level review of prospective physical infrastructure requirements, reinforcement and delivery factors associated with the Areas of Search specifically focussing on (a) highways, (b) utilities and (c) waste water. These physical infrastructure requirements are key considerations which in GL Hearn's experience vary between locations for developments of a similar scale.
- 9.45 Strategic development of the scale envisaged (1500+ dwellings) will invariably require new social infrastructure (schools, healthcare, open space etc) but the factors influencing this are influenced to a greater degree by the scale of development proposed.
- 9.46 CAPITA has sought to identify high-level highways infrastructure requirements which are likely to result from development in each Area of Search.
- 9.47 The starting point has been to estimate the required road infrastructure for the Areas of Search is to identify the likely level of road based trip making which could occur at the sites. For each site, a range of the number of dwellings which could be developed has been estimated – based on the development models - and assumptions on trip rates per dwelling, mode split and the proportion of trips which are likely to be outside the development have been applied to derive an estimate of the likely daily trips to and from the development to external areas. These assumptions have been

estimated based on a combination of information from the National Travel Survey, National Census 2011 and professional judgement.

- 9.48 CAPITA has used recommended flow ranges from the DfT Design Manual for Roads and Bridges to calculate the number of new road lanes which would be required to cater for this new road traffic to and from the Areas of Search.
- 9.49 From a review of aerial mapping of the Areas of Search and the adjacent highway network, we identified routes of road which would be required (to provide sufficient road capacity to cater for the development traffic) to connect with the existing highway network. Also identified was any requirement for new or improved junctions or bridges which could be required which would add additional infrastructure costs.
- 9.50 The assessment should be considered as an initial high-level indicative assessment which can be used to provide a comparison between locations for the purposes of this Study. More specific local assessments of network capacity and infrastructure requirements will be required for Areas of Search which are taken forward, but this is beyond the scope of this Study.
- 9.51 In respect of utilities, GL Hearn first approached National Grid to enquire about the capacity of transmission networks across the HMA and the ability for the network to accommodate residential growth. National Grid's Development Consent Order Liaison Officer confirmed in September 2017 that it was highly unlikely that National Grid's transmission networks would require any reinforcement for residential growth. Details of the relevant contacts at the respective distribution companies – Cadent for gas and Western Power for electricity - were provided.
- 9.52 GL Hearn subsequently approached the relevant distributors. First in respect of gas, GL Hearn were able to speak with Cadent Gas's distribution team however they were unable to accommodate our request for commentary on reinforcement requirements across the HMA network; rather dealing only with smaller scale connections such as household. Cadent Gas did however confirm that generally speaking, the further from the conurbation, the more likely that reinforcement would be required.
- 9.53 In respect of electricity, Western Power's Distribution Manager for Birmingham provided feedback on the electricity network across the HMA and the capacity of the primary networks to accommodate residential growth. We liaised directly with the relevant network planners across the HMA who then returned information on each Area of Search and the likely network reinforcement works associated with these.
- 9.54 GL Hearn also approached Severn Trent and liaised with the Sewerage Management Planning Team Manager to prepare a high level sewer capacity appraisal of each Area of Search. The

respective planning teams for each catchment area covering the Areas of Search then carried out desk-based assessments and provided commentary to indicate where proposed residential growth may have a detrimental impact on the performance of the existing public sewerage network. The commentary provided is not supported by detailed modelling and further local level assessments will be necessary to determine whether additional flows can be accommodated. Discussions should also be had with the Lead Local Flood Authorities.

- 9.55 The outputs from the highways, utilities and waste water work are set out below in Table 60 for each Area of Search.

Table 60: Areas of Search – Highways & Utilities (inc. Waste Water)

Area of Search	Highways	Utilities	Waste Water
Around Dunston	It is anticipated that one dual 2 ⁴⁹ and one single 2 ⁵⁰ access - from A449 and A518 to the north respectively (all with new junctions) will be required. Improvements to A449 and A518 for 1km either side of junctions (i.e. 4km of improvement). A449 / M6 junction assumed to require upgrading. In addition, one bridge crossing rail line for link to access A449 would be required.	This is a known area of weak network. Even the smallest of developments would trigger significant reinforcement. Minimal work required would be Primary Sub Station upgrade with new HV circuits.	There are some reported flooding incidents downstream in Stafford. The topography of the Area of Search suggests that if flows were to drain north, then a pumped solution to drainage would be required with potential connection point in Coppenhall. If flows were to drain to the south then a gravity solution is more likely. Further investigation and modelling is required to determine the current network could handle extra flows from the Area of Search. Depending on scale, future development could potentially have a large impact on assets downstream.
Between Wolverhampton and Penkridge	It is likely that one dual 2 and one single 2 access will be required from A449 and station drive respectively (2 new junctions assumed). Improvements to A449 and Station Drive either side of junctions (i.e. 4km of improvement). A449 / A5 junction assumed to require upgrading.	This is a known area of weak network. Even the smallest of developments would trigger significant reinforcement. Minimal work required would be Primary Sub Station upgrade with new HV circuits.	There is one reported flooding incident downstream from the Area of Search. Foul flows are likely to drain through Coven Heath/Coven Village pumping station and be pumped to Coven Heath Sewage Treatment Works (STW). There are also a number of other pumping stations in and around the Area of Search. Further investigation is required to determine if they would be impacted by significant development. The topography in the Area suggests a gravity connection with flows draining in a general east to west direction before being pumped to the STW. There are some 225mm and 150mm foul pipes in and around the Area which could facilitate flows.

⁴⁹ Dual 2 is a dual carriageway with two lanes in either direction

⁵⁰ Single 2 is a single carriageway with two lanes (one in either direction)

<p>Around Fradley and Alrewas</p>	<p>It is likely that one single carriageway access (A38) and one single carriageway (A513) both with new junctions. Improvements to roads either side of junctions (i.e. 4km of improvement). Two junctions assumed to require upgrading - A513/A38 and Hillards Cross.</p>	<p>To facilitate development in this area, it would require significant reinforcement including 132KV network reinforcement, additional Primary substation with associated 11kv network to the proposed development. A new Primary substation at Fradley would have some benefits with the transfer of load from the existing Lichfield site but to fully utilise any spare capacity gained significant 11kV reinforcement would still be required.</p>	<p>There are a number of reported flooding incidents downstream of the development near the Alrewas STW. Any future development could conceivably connect to the existing network that drains to Lichfield STW. The topography of the Area suggests a general drop from south to north suggesting a gravity connection is possible, avoiding pumping stations downstream being overly affected. There is not a sufficient surface water system in Alrewas that could accommodate the flows from future development however there are a number of watercourses in and around the Area which could potentially take these flows and there is a surface water system in Fradley that outfalls to a nearby watercourse with a possible connection point.</p>
<p>Around Shenstone</p>	<p>One dual 2 access to A38 and one single onto the A5127 (one new junction on A5127) likely to be required. Improvements to roads either side of junctions (i.e. 4km of improvement). Upgrade of A38/A5148 assumed. One new bridge to access site west of A5127 to cross railway line.</p>	<p>A new Primary substation at Shenstone would be an option due to the distance from the existing Primary location i.e. 11kV feeders in excess of 10km's. This may enable the transfer of load from the existing Primary location to a new site although significant 11kV reinforcement would still be required to fully utilise any spare capacity gained at the existing Primary Substation.</p>	<p>There are a number of reported flooding incidents downstream of the Area of Search. Development of a significant scale at this location (i.e. towards the higher end of the spatial development model), has the potential to have a severe impact at the downstream pumping station and combined sewage overflow. The Area of Search is located west of the existing STW and it is expected that flows would flow via gravity sewers into the existing network. The largest downstream pipe is 300mm which may pose significant issues depending on scale. There are multiple watercourses within the Area and there is a surface water network downstream.</p>
<p>Around New Arley</p>	<p>Area is distant from major roads. It will need significant length of higher capacity routes to</p>	<p>Two potential options – both of which are significant:</p>	<p>There is known hydraulic flooding within the network downstream of the Area of Search. Any future</p>

	connect with strategic roads. New dual carriageway to the north (to new A5 junction) and a single carriageway to the south to connect with local roads at Fillongley will be required. Additionally, two new junctions will be required. Will require improvements to roads either side of junctions and allow for additional lengths of road improvement along local lanes connected to new roads (say 6km of improvement).	<p>(1) A new 33/11kV PSS connected from Nuneaton BSP. This will be subject to Modification Application for reinforcement at Coventry GSP(Grid Supply Point); or</p> <p>(2) A new 132/11kV PSS connected off the 132kV network fed from Lea Marston GSP.</p>	development within the Area of Search would drain directly into the STW via gravity or pumping. It is considered that any surface water would be managed on site through Sustainable Urban Drainage systems and any excess runoff discharged to the local watercourse which presents no risks.
South west of Stratford-on-Avon District	Area is distant from major roads. Needs significant length of higher capacity routes to connect with strategic roads. New dual carriageway to the east to connect with A3400 and a single road to connect with the B4632 which connects with the SS Relief Road to the north. Two new junctions required. Improvements to roads either side of junctions (4km of improvement).	This area is at the end of 11kV overhead circuit between two Primary's (Stratford & Long Marston) both of which would need reinforcement works and new 11kV circuits. It is likely that a new Primary would be required in this area	<p>There are no known network constraints downstream of the Area of Search. Flows from the Area are assumed to be pump to Milcote STW.</p> <p>It is considered that any surface water would be managed on site through Sustainable Urban Drainage systems and any excess runoff discharged to the local watercourse which presents no risks.</p>
Around Wellesbourne	One dual to A429 and one single lane road to Loxley Lane, with two new junctions will be required. Improvements to roads either side of junctions (4km of improvement).	To accommodate any new demand up to approx. 28MVA will require a third 132kV circuit between Berkswell and Warwick BSP, upgrade two 33kV circuits to Wellesbourne and replace two 33/11kV transformers at Wellesbourne. New demand greater than an additional 28MVA will require a third 132kV circuit between Berkswell and Warwick BSP, and an additional PSS located within the development site. Both options are also Subject to Modification	There is known hydraulic flooding within the network downstream of the Area of Search. Any flows from future development within the Area of Search are assumed to flow via gravity to Wellesbourne STW. Abandonment of these works and transfer to Milcote STW would require a 10km rising main which may not be feasible. It is considered that any surface water would be managed on site through Sustainable Urban Drainage systems and any excess runoff discharged to the local watercourse which presents no risks.

		Application for demand on Berkswell GSP.	
Around Balsall Common	By-pass assumed to be required to serve the area, providing 2 dual 2 routes for access to the development which is sufficient. Further local level work will be required to confirm this. Improvements required to roads either side of junctions (4km of improvement). One bridge included to cross railway line.	HV in the area overhead. The existing primary substation is not close and therefore the area would probably need a new primary.	The Area of Search encompasses Balsall Common STW so sewer capacity is not considered to be a significant constraint however obvious nuisances should be considered. The Area of Search is assumed to drain directly to the STW and further investigation/discussion is required to understand capacity concerns. The River Blythe and multiple ponds are within the Area of Search and therefore surface water flows are unlikely to discharge to the sewer system.
South of Birmingham	New dual carriageway to east to connect with A3400 at new junction will be required. Improvements to roads either side of junction (3km of improvement, 2kms to M40 junction and 1km south). Some improvements to M40 junction assumed.	HV in the area overhead. The existing primary substation is not close and therefore the area would probably need a new primary.	At present there is no existing STW or obvious point of connection which means that either a new STW would be required or the Area of Search would have to be served by means of an inset appointment. It is considered that any surface water would be managed on site through Sustainable Urban Drainage systems and any excess runoff discharged to the local watercourse which presents no risks.
Between Birmingham and Bromsgrove/Redditch	New single carriageway to west to connect with B4096 at new junction. New dual carriageway to the east to connect with the A441 with a new junction at Redditch Road. Improvements to existing roads either side of the new junctions (around 4km of improvement). New bridge over rail line may be required to the east.	HV in the area overhead. The existing primary substation is not close and therefore the area would probably need a new primary.	The Area of Search is situated in a location where the closest existing STW of relatively significant size is located to the south-east of Alvechurch which drains to the River Arrow. Depending on the scale of any new settlement, it is considered that significant reinforcement would be required, given that the current STW serves around 4,000 dwellings. It is considered that any surface water would be managed on site through Sustainable Urban Drainage systems and any excess runoff

			discharged to the local watercourse.
North of Penkridge	A single 2 lane access from A449 to new junction is likely to be required. Likely to require improvements to A449 1km either side of new junction (i.e. 2km of improvement).	This is a known area of weak network and per today this would have to be classified red. Even the smallest of developments would trigger significant reinforcement. Minimal work required would be Primary Sub Station upgrade with new HV circuits. Penkridge is likely to require a new Primary Sub Station.	There are no reported incidents of flooding downstream of the Area of Search. There are assets downstream i.e. Stafford Road pumping station and combined sewage overflow. The topography of the Area suggests that flows would gravity connect to the existing network, further investigation is required to determine if the existing network could cope with the extra flows generated. There is a surface water network to the south of the Area that outfalls into the River Penk and further analysis is needed to establish the ability to accommodate new flows.
South of Penkridge	A single 2 lane access from A449 to new junction is likely to be required. Likely to require improvements to A449 1km either side of new junction (i.e. 2km of improvement).	This is a known area of weak network and per today this would have to be classified red. Even the smallest of developments would trigger significant reinforcement. Minimal work required would be Primary Sub Station upgrade with new HV circuits. Penkridge is likely to require a new Primary Sub Station.	There are no reported incidents downstream of the Area of Search. Foul flows are likely to drain through Stafford Road pumping station and combined sewage overflow. The topography of the Area suggests that flows would gravity connect to the existing network, further investigation is required to determine if the existing network could cope with the extra flows generated. There is a surface water system directly north of the Area of Search which could accommodate the extra flows.
South of Stafford	Two single access points likely to be required - one from A449 to existing junction and one from A34 (new junction required). Improvements to A449 and A34 for 1km either side of both junctions (i.e. 4km of improvement). A449 / M6 junction assumed to require upgrading.	This area has negligible existing network capacity. As a bare minimum, significant modifications to the nearest primary substation and new 11kV circuit(s) will be required.	There are some reported flooding incidents downstream of the Area of Search which may be exacerbated from any future development in this Area. Current flows from Walton on the Hill and the east of Stafford pass through Baswich pumping station and combined sewage overflow which could be impacted. The topography of the area suggests that a gravity connection could take flows from

			any future development there, with further modelling required to determine the true impact.
East of Lichfield	Likely to require one single access with A5192 (new junction). Improvements to roads either side of junction (2km of improvement). A5192 / A5127 roundabout assumed to require upgrading. A tunnel / bridge required to cross railway line also likely to be required.	To facilitate development in this area, it would require significant reinforcement including 132KV network reinforcement, additional Primary substation with associated 11kv network to the proposed development. A new Primary substation at Shenstone would be one option due to the distance from the existing Primary location i.e. 11kV feeders in excess of 10km's. This may enable the transfer of load from the existing Primary location to a new site although significant 11kV reinforcement would still be required to fully utilise any spare capacity gained at the existing Primary Substation	The Area of Search is in relatively close proximity to the STW. There are no known sewer flooding problems immediately downstream and there are no pumping stations or combined sewage overflows downstream of the development. There is an existing pumped sewer that pumps from the east of the catchment to the treatment works. This pumped sewer runs across the new development. Elevation shows a high point in the middle of the Area so two separate connection points may be required. There are existing surface water outfalls which spill to Curborough Brook.
North of Tamworth	It is assumed a range of highway mitigation schemes will be needed including new roads and junctions to enable north/south and east/west movements, improvements to existing roads within Tamworth and improvements to key junctions within Tamworth. Any new roads may need to cross railway lines and flood zone 3. It is noted that a high level study has been carried out in relation to an extension in this area in 2013, where it concluded that the capacity of the highway network was 700 dwellings. It identified a range of transport measures including a new road which would allow a total of 1,350 dwellings. Given the high costs of these	This area would require replacement of existing two 132/33kV transformers at Tamworth Town Bulk Supply Point and possibly replace 33KV switchgear to match new transformers. Likely to require new 33/11 KV primary for the scale of development.	There are a number of reported flooding incidents downstream of the Area of Search dependent on where the connection point is. Flows are unlikely to affect pumping stations or combined sewerage overflows downstream of the Area as there are no assets on a direct downstream leg. The STW is located at the south west edge of the Area of Search. The topography of the area shows that the terrain drops from the north east towards the south west suggesting that a gravity connection may be sufficient. There is a surface water system in Tamworth to the south.

	<p>measures and the impact on viability it was concluded they were only likely to be delivered with public funding. It is noted that planning consent has been granted for the 700 homes and these are currently being built out. A planning application made to Lichfield District Council in 2014 for a further 1,000 homes has been called in by the Secretary of State for his determination</p>		
<p>North West of Tamworth</p>	<p>Likely to require one dual 2 access to A51 in the north (at new junction). Improvements to roads either side of junctions (2km of improvement).</p>	<p>This area would require replacement of existing two 132/33kV transformers at Tamworth Town Bulk Supply Point and possibly replacement of 33KV switchgear to match new transformers. Likely to require new 33/11 KV primary for the scale of development.</p>	<p>There are no known flooding incidents downstream of the Area. Flows from the Area are likely to use Hopwas pumping station and combined sewage overflow and therefore would impact them. The topography in the area suggests that a gravity sewer could take flows towards the treatment works. Further investigation as to whether the assets and network could accommodate the extra flows should be carried out. There is a surface water system in Tamworth but this may be too far away from the Area to be a viable option.</p>
<p>North of Walsall around Brownhills</p>	<p>It is assumed that one single 2 access A5190 to north via new junction and a single 2 to A5195 via existing bridge will be required. Improvements to roads either side of junctions (i.e. 4km of improvement). Upgrade of A5185 junction assumed.</p>	<p>This area would require replacement of existing two 132/33kV transformers at Tamworth Town Bulk Supply Point and possibly replace 33KV switchgear to match new transformers. Upgrade existing two 33/11KV transformers at Polesworth PSS. Upgrade two 33KV circuits which feed Polesworth.</p>	<p>There are no reported flooding incidents downstream. There is existing network within the Area which is pumped into Burntwood STW, any future flows could utilise this, although there would be impact to Brownhills pumping station and combined sewage overflow. There is an existing surface water system to the west of the Area of Search that outfall to the Wryley and Essington canal and Anglesey river. As the Area is on the other side of these watercourses, new outfalls could potentially drain to them. On the east side, Crane Brook</p>

			watercourse could also potentially accept flows.
East of Polesworth	Likely to require one single 2 access to existing local roads although these will require upgrading. Improvements to roads either side of junctions and possibly some further lengths particularly along station road (approx. 6km of improvement). The possibility of rerouting A5 north of Tamworth as noted by the LPA is unlikely to be required to accommodate smaller development	This area would require replacement of existing two 132/33kV transformers at Tamworth Town BSP and possibly replacement of 33KV switchgear to match new transformers.	There is known hydraulic flooding in the Area of Search. The existing rising main crossing the Area of Search should be drained to the sites new gravity system. This should then be directly pumped to Polesworth STW. It is considered that any surface water would be managed on site through Sustainable Urban Drainage systems and any excess runoff discharged to the local watercourse which presents no risks.
South of Stratford-upon-Avon town	Likely to require new single carriageway to west to connect with SS Relief Road. Only one upgraded junction required. Improvements to roads either side of junctions (2km of improvement).	This area would require new circuits out of Stratford Primary which is on the other side of the river. Stratford District Council will not let us use existing bridges for new cables therefore we have to rely on 3rd party landowners to bring cables under or over the river.	There is known hydraulic flooding on Loxley Road. The western section of the Area of Search would drain to Lucy's Mill pumping station via the existing network requiring off site drainage. The Eastern section of the Area of Search would drain to Loxley Road which would require capacity improvements. It is considered that any surface water would be managed on site through Sustainable Urban Drainage systems and any excess runoff discharged to the local watercourse.
South east of Redditch	Likely to require a new single carriageway to east to connect with A448 at new junction. Improvements to roads either side of junction (2km of improvement).	This area would need reinforcement of the 11kV network and Possibly 66/11 Tx Changes at Redditch South. HV reinforcement would be required but close to existing primary, New EHV network if new primary required.	There is known hydraulic flooding downstream of the Area of Search towards Priest Bridge STW. The Area is located to the south of Redditch and cannot drain to the trunk sewer, which drains to Priest Bridge STW, as there is no spare capacity. It will either gravitate or be pumped to Astwood Bank STW via a dedicated system.
South of Dudley	Likely to require a new dual carriageway to west along Wassell Grove Lane to connect with A456 at existing roundabout. Improvements to roads	This is an area with poor infrastructure so would require new 11KV circuits and minimal Primary upgrades with an extension to the 11KV circuit	There is known flooding locations on Glen Road and Landsgate. Additional flows from the proposed development could lead to a detriment at these locations.

	either side of junction (2km of improvement).	breaker board and transformer upgrades / possible additional transformer. The area is near the primary network however.	No overflows known to be located downstream of the possible connection points. There are multiple ponds located across development catchment, therefore surface water flows are unlikely to discharge to the sewer system.
South of Birmingham Airport & the NEC	Likely to require a new single carriageway to east to connect with Damson Parkway at new junction. Improvements to Damson Parkway either side of junction (2km of improvement) likely to be required.	HV reinforcement would be required but the area is close to the existing primary network however Primary reinforcement is likely.	There is a single reported flooding location on Valley Road downstream of the Area of Search. Additional flows from the proposed development could lead to a detriment at this location. There are multiple ponds located across development catchment, therefore surface water flows are unlikely to discharge to the sewer system.
North of Wolverhampton	This area benefits from main road infrastructure and connections to the wider highway network as a result of the employment development, therefore new infrastructure would not be required of any great scale. However likely to require additional access and circulation within any new residential-focussed expansion.	This is a known area of relatively weak network. Even the smallest of developments would trigger significant reinforcement. Minimal work required would be Primary Sub Station upgrade with new HV circuits.	The Area of Search is located in the near vicinity to Coven Heath STW. Subject to modelling, once potential connection points and flow rates are confirmed, sewer capacity upgrades are envisaged to be low due to the proximity to the STW. Any prospective upgrades to the STW are not envisaged to be significant.
East of Birmingham	The area is constrained by M6 and M6 Toll. It is assumed that access will be from Birmingham road single 2. One new junction likely to be required. Improvements to roads either side of junction (2km of improvement).	HV reinforcement would be required but the area is close to the existing primary network however Primary reinforcement is likely.	There is an external reported flooding location on Roman Way located directly upstream of the Coleshill STW. Additional flows from the proposed development could lead to a detriment at this location. There are multiple ponds located across development catchment, therefore surface water flows are unlikely to discharge to the sewer system.

Delivery Models

9.56 For strategic development of the scale considered in this section, deliverability issues are particularly a function of the inter-relationship between the value generated by the development (which is particularly a function of the scale of development and residential values) and the costs of delivering strategic infrastructure.

9.57 GL Hearn has sought to assess the delivery issues associated with the different strategic development models. There are typically greater development costs and increasing complexities for larger strategic development schemes; however garden villages and settlements bring with them increased opportunities for public funding support.

Table 61: Assessment of Delivery Models

Development Model	Deliverability Issues
<p>Proportionate Dispersal</p>	<ul style="list-style-type: none"> • Shortest lead-in times, typically 3-5 years, to initial completions • Typically lower requirements for strategic infrastructure, with consequently less requirements for public sector funding support. • Some contribution to delivering social infrastructure and open space depending on scale and existing local provision. • Delivery through typical private-sector led development model, with several housebuilders depending on scale. Delivery of typically 50-80 dwellings per year per developer. • Cumulatively may not deliver strategic infrastructure requirements to support scale of growth taking place across HMA.
<p>Employment-Led</p>	<ul style="list-style-type: none"> • Lead in times of 3-5 years to initial completions depending on scale of housing provision • Larger infrastructure requirements, influenced by scale, location and existing provision. Possibility for greater support financially for infrastructure if tied in with employment provision. • Some contribution to delivering social infrastructure and open space depending on scale and existing local provision and the surrounding environment.
<p>Urban Extensions</p>	<ul style="list-style-type: none"> • Lead-in times of typically 5+ years to initial completions, taking account of greater complexities associated with planning and infrastructure delivery. • Larger and more costly infrastructure requirements, influenced by scale, location and existing provision. Strategic infrastructure typically required to support. • Can draw on existing local infrastructure, including highways, schools, health care etc depending on existing provision and capacity of this. • Scale brings opportunities for place-making investment, which can contribute to creating value within the development scheme.

	<ul style="list-style-type: none"> • At lower end of size range, delivery model is typically private-sector led, with several housebuilders delivering concurrently. Typically 50-80 dwellings per year per developer. • At higher end of scale range, greater potential need for public sector involvement/ JV to drive the pace of delivery given likely larger upfront infrastructure costs and impacts on cash flow. • Nature and scale of developments may create fewer opportunities to attract significant public funding investment to deliver strategic infrastructure.
New Settlements	<ul style="list-style-type: none"> • Scale brings opportunities for attracting Central Government investment both in creating capacity and supporting infrastructure delivery. • Difficult for private sector to absorb costs alone, given significant upfront infrastructure costs and implications on cash flow and risk. Important public sector role on this basis in partnering and reducing risk through Local Delivery Vehicle or public/private Joint Venture. • 5-10 year lead-in time in most instances, but could be longer where particular development or infrastructure complexities arise. Delays can have a significant overall impact on delivery rates in an area. • Opportunities for place-making investment to set tone of scheme and create value, with potential for up to 20% value uplift which can support delivery of infrastructure. • Need for bespoke delivery model with delivery through a greater range of housing providers than traditional private-sector led development model in order to create place and critical mass. This could involve public sector role (e.g. accelerated construction), custom build development, build-to-rent etc.

9.58 Public sector funding opportunities include:

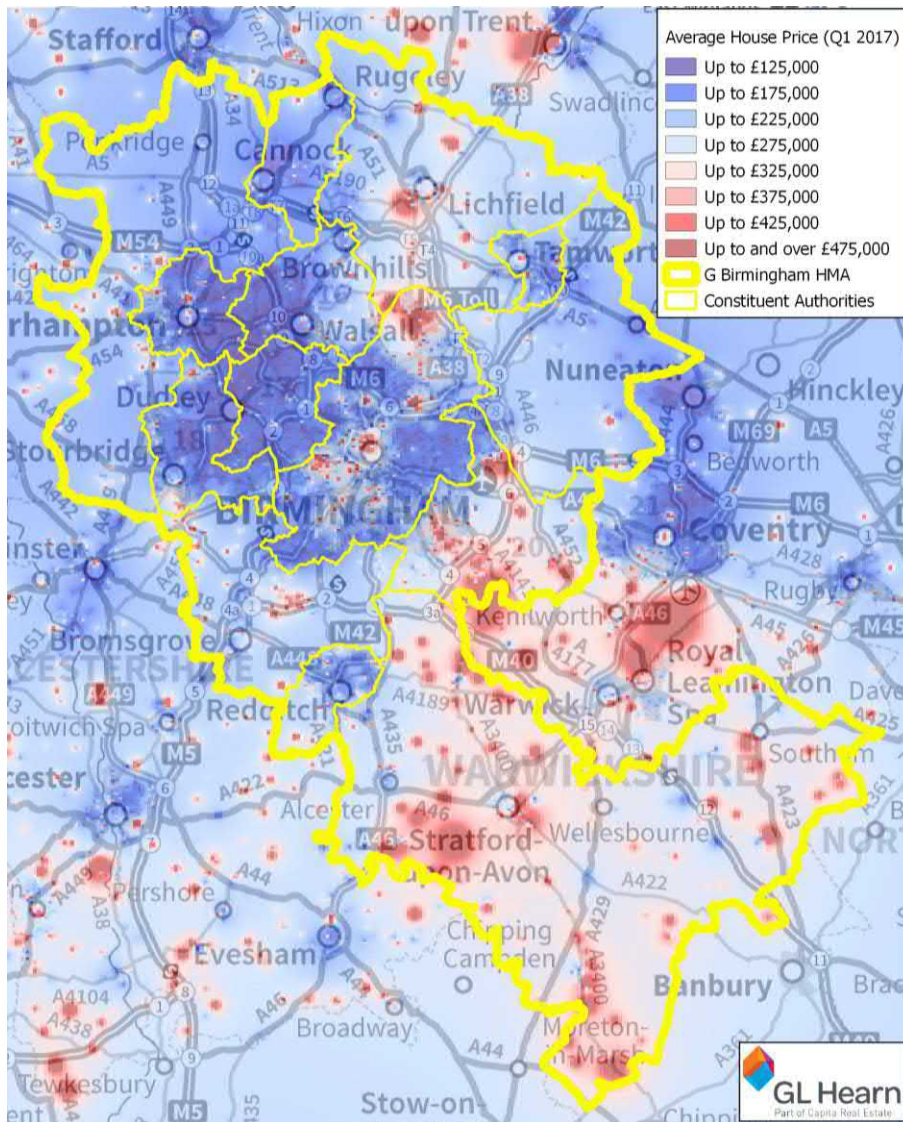
- £3 billion Home Building Fund – managed by the HCA providing development finance and infrastructure finance of up to £250 million to drive forward housing delivery;
- £2.3 billion Housing Infrastructure Fund – managed by CLG, with opportunities to bid for funding through the Combined Authority to support infrastructure delivery which opens up homes;
- Housing Zones and Large Sites Capacity Fund – funding of £6.3 million is available to drive forward delivery of brownfield sites. The large sites capacity fund provided support to local authorities, including funds to support additional consultancy, to deliver large schemes of 1500+ homes.
- Accelerated Construction – a £1.7 billion fund available to support schemes which accelerate construction of homes, including modular construction and direct commissioning (whereby HCA commissions a contractor to build homes);
- Garden Villages and Towns – a programme of funding available through CLG to support planning and development activities to support delivery of a new generation of garden villages and towns.

9.59 Detailed work will be needed to assess infrastructure requirements associated with strategic development, to cost these and to consider cash flow issues to support viability. This detailed work

is beyond the scope of this exercise, and may well require further specific evidence studies to consider infrastructure requirements.

9.60 However what can be considered at this stage is the relationship between potential Areas of Search for strategic development and the house price ‘value geography.’ Figure 39 shows higher house prices in Stratford-on-Avon District, around Sutton Coldfield and Lichfield. House prices are lower within the conurbation and other urban centres. It is acknowledged that housebuilding will naturally have an effect on future property values over time however this is considered to be the most appropriate point of reference.

Figure 39: House Price Value Heat map



Source: GLH Analysis of HMLR House Price Data

- 9.61 Of the urban extension options, it is evident that the extension options to Stratford-on-Avon and Lichfield relate to higher value housing markets; whilst prices towards the south of Dudley are higher than in many other parts of the conurbation. This will support viability.
- 9.62 Of the new settlement options, the options South of Birmingham, in Stratford District (Around Wellesbourne) and South west of Stratford-on-Avon District) sit within higher value housing markets, as does the Balsall Common area. Values are also reasonable around Shenstone. Values are lower for those options in North Warwickshire and South Staffordshire.
- 9.63 The issue of deliverability is however not just about house prices but about market capacity. Past housing completions on their own are not necessarily a good measure of the future delivery potential as they are potentially influenced by land supply as well as market factors. To address this, we have looked at housing stock growth rates.
- 9.64 Table 62 compares historical growth in the housing stock, measured in terms of annual growth in the housing stock over the 2011-16 period and 2001-16 period. In the longer-term housing delivery rates in the HMA authorities have varied from 0.4% pa – 1.0% pa, with the highest rates achieved in Stratford-on-Avon District.

Table 62: Historical Housing Delivery Rates Assessment

	5 Year CAGR 2011-16	CAGR 2001-16
Birmingham	0.4%	0.5%
Dudley	0.5%	0.4%
Sandwell	0.5%	0.6%
Solihull	0.5%	0.5%
Walsall	0.6%	0.5%
Wolverhampton	0.5%	0.5%
Stratford-on-Avon	0.9%	1.0%
North Warwickshire	0.4%	0.5%
Cannock Chase	0.3%	0.8%
Lichfield	0.5%	0.9%
South Staffordshire	0.5%	0.6%
Tamworth	0.2%	0.6%
Bromsgrove	0.6%	0.8%
Redditch	0.5%	0.7%
Rugby	0.9%	1.2%
Stafford	0.7%	1.0%
Telford and Wrekin	1.3%	0.7%
South Derbyshire	1.0%	1.5%
England	0.7%	0.8%

- 9.65 GL Hearn would consider that given that there are a range of authorities nationally, including a number of examples within the Midlands, of authorities delivering 1.3% through to 1.6% stock growth pa that there remains considerable potential to boost housing delivery relative to those which have been seen historically. On average nationally, housing stock has grown by 0.8% pa across England over the 2001-16 period.
- 9.66 However the gauge the market capacity to deliver further housing provision, over-and-above what is already planned, it is necessary to consider what delivery of the housing requirement figures (targets) in current or emerging plans would imply. To do so we have considered the residual housing requirement taking account of completions to the base date used in the land supply calculations, and what delivery of this would imply in terms of a rate of growth in the housing stock.
- 9.67 The analysis in Table 63 shows that there are particular constraints to introducing further residential land supply in North Warwickshire, which is already planning in its emerging Local Plan to deliver housing growth of 1.8% pa. Given moderate house prices in the District and the very strong rate of housing delivery proposed, our analysis indicates no effective potential for additional supply to be brought forward in North Warwickshire.
- 9.68 Over the period to 2028, Lichfield would need to deliver 1.4% pa and Stratford-on-Avon 1.3% pa stock growth to 2031 to meet housing targets in these areas. These are towards the higher level of the range shown in the Table for authorities in the HMA, and the comparators shown in Table 62, implying limited potential for additional supply to be brought forward.

Table 63: Assessing Market Capacity – Delivering Existing Housing Targets

	Plan	Plan Period to	CAGR	Median House Price	Median Price - Semi-Detached
Cannock Chase	Adopted	2028	0.5%	£142,950	£132,000
Black Country	Adopted	2026	0.8%	£135,000	£137,500
Tamworth	Adopted	2031	0.6%	£164,000	£160,000
Birmingham	Adopted	2031	0.6%	£150,000	£165,000
South Staffordshire	Adopted	2028	0.2%	£194,000	£168,000
North Warwickshire	Draft	2031	1.8%	£175,000	£170,000
Redditch	Adopted	2030	1.1%	£175,000	£178,000
Lichfield	Adopted	2028	1.4%	£213,000	£184,000
Bromsgrove	Adopted	2030	1.0%	£246,250	£224,950
Solihull	Draft	2033	0.8%	£245,000	£245,000
Stratford on Avon	Adopted	2031	1.3%	£289,000	£254,000

- 9.69 Conversely there are a range of areas across the HMA with a growth rate of below 1.0%, with the lowest being South Staffordshire at 0.2% pa. GL Hearn considers that across many of these areas additional supply could be introduced.

Drawing the Analysis Together

Approach

9.70 In drawing the analysis in this section together, the consultancy team considers that there are a range of considerations in identifying a set of preferred options for strategic development to form the basis of Study recommendations. These include:

- **Ability to meet housing needs** – as identified the unmet housing need is particularly that of “the conurbation” and thus the geographic relationship to the conurbation and distance of locations from this is, we think, an important consideration;
- **Impact on the Green Belt** – making a distinction between locations which are within and outside the Green Belt, and those which are beyond it;
- **Sustainability** – drawing from the SA the best performing locations, and excluding those with ‘significant negative outcomes’ against one of more of the SA objectives;
- **Public Transport** – for strategic development, the accessibility to public transport and particularly to the rail network, is an particularly important consideration within the wider sustainability of different development options; and
- **Deliverability** – drawing together analysis to comment on the relative market attractiveness and delivery challenges associated with different strategic development locations.

Figure 40: Influences on Shortlisting and Prioritisation



9.71 We have sought to bring these factors together in a series of Venn diagrams which capture the relative merits of different strategic growth locations. The options appraisal framework is shown in Table 64.

Table 64: Options Appraisal Framework

Rating	Housing Need	Green Belt	Sustainability	Public Transport	Deliverability
Highest	Likely to substantially meet the defined needs of the conurbation	Not in the Green Belt	Significant Positive outcome overall	Adjacent to a train station and short journey time to Birmingham	Highest relative deliverability
High	Likely to meet a significant proportion of the defined needs of the conurbation	Partially within an area making a Supporting Contribution to GB purposes	Positive outcome overall	Within a reasonable distance of a train station and reasonable journey time to Birmingham	High relative deliverability
Moderate	Likely to meet a reasonable proportion of the defined needs of the conurbation	Within an area making Supporting Contribution to GB purposes	Neutral outcome overall	In the broad vicinity of a train station moderate journey time to Birmingham	Average relative deliverability
Low	Likely to meet some of the defined needs of the conurbation	Partially within an area making a Principal Contribution to GB purposes	Negative outcome overall	At some distance from a station and moderate journey time to Birmingham	Notable delivery complexities
Lowest	Likely to meet relatively few of the defined needs of the conurbation	Wholly within an area making a Principal Contribution to GB purposes	Significant Negative outcome overall	No train station or remote from a station and long journey time to Birmingham	Significant delivery complexities

- 9.72 In assessing the ability to meet housing needs, consideration has been given to the geographical proximity of the Areas of Search to the conurbation by applying buffer zones of (1) <2.5km, (2) 2.5km – 5km (3) 5km – 10km; (4)10km to 15km and (5)15km +.
- 9.73 In considering the Green Belt, Wood Plc has evaluated each relevant Area of Search on the basis of the criteria set out above in Table 64.
- 9.74 With regards to sustainability, Wood Plc has considered each Area of Search's overall outcome from the Sustainability Appraisal and rated it accordingly, ranging from a significant positive outcome overall down to a significant negative outcome overall.
- 9.75 Public transport accessibility has been assessed taking account of the distance to a rail station, the journey time from the station to Central Birmingham as the largest employment centre in the sub-region, with some regard had to service frequency (noting that with strategic development this could potentially be improved).

9.76 In assessing deliverability, GL Hearn has had regard to:

- The potential scale of development;
- Our analysis of the merits of the different development models;
- The potential physical infrastructure requirements, in respect of highways and utilities; and
- The geography of housing values.

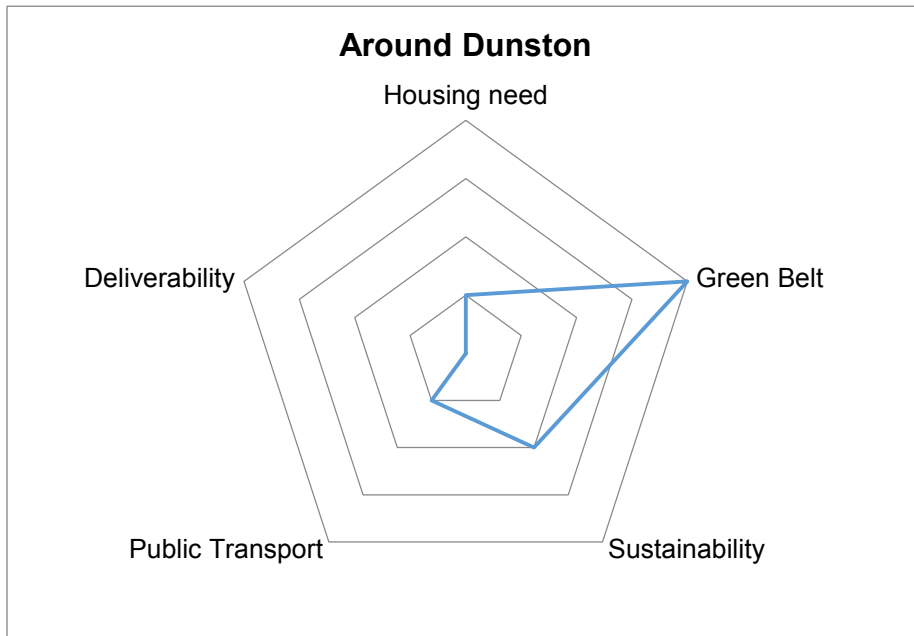
9.77 It is for the Client Group to make decisions on which locations should be taken forward for detailed consideration, but the assessment is intended to provide a framework for this.

Assessment of the Areas of Search & Venn Diagrams

9.78 The options are assessed against the appraisal framework shown in Table 64. The results of this are shown in the Venn diagrams from page 242 to page 265 which visually indicate the relative merits and performance of the different options for strategic development. Whilst it may be appropriate for the authorities to weight different considerations in assessing what growth options to take forwards, in general terms the larger the area within the pentagon the stronger the performance of the option in question.

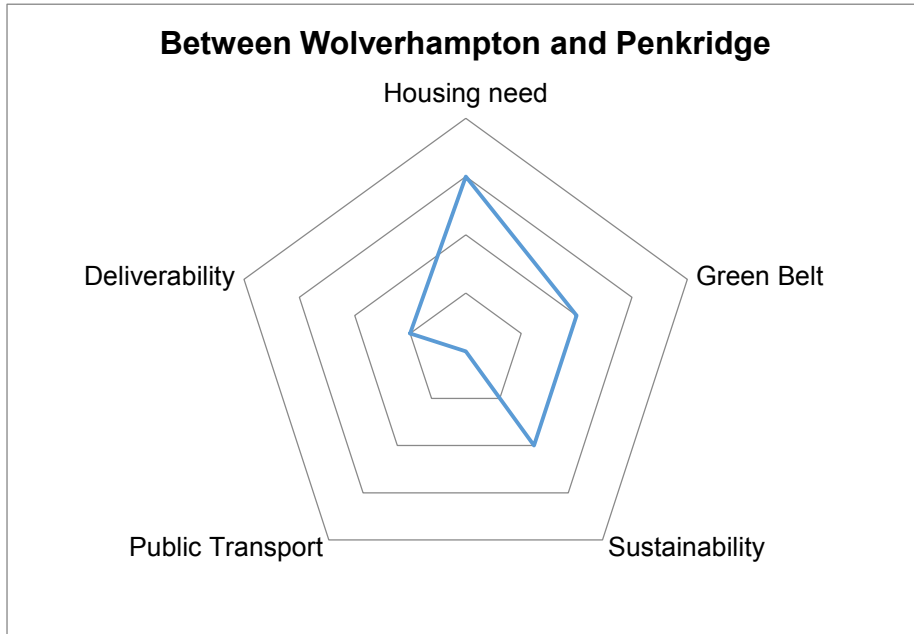
New Settlements

9.79 Around Dunston



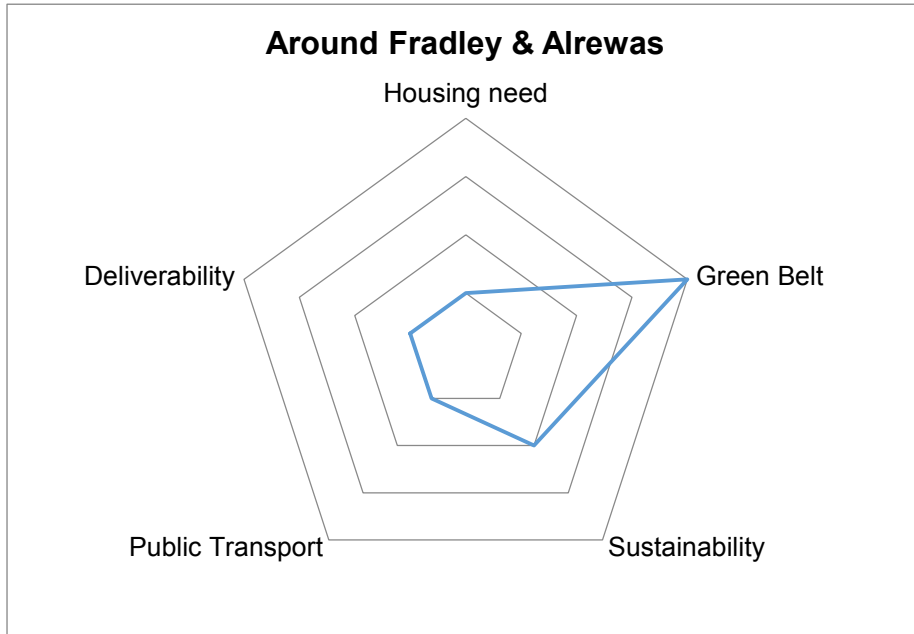
- The area is within 15km of the conurbation but beyond 10km and will therefore help to meet some of the need;
- Not in the Green Belt;
- Neutral outcome overall from Sustainability Appraisal;
- Around 4.5km from the nearest train station with a journey time of 32 minutes to Birmingham New Street; and
- Potentially significant highways works required to support development; together with significant utilities infrastructure reinforcement. Lower housing values.

9.80 Between Wolverhampton and Penkridge



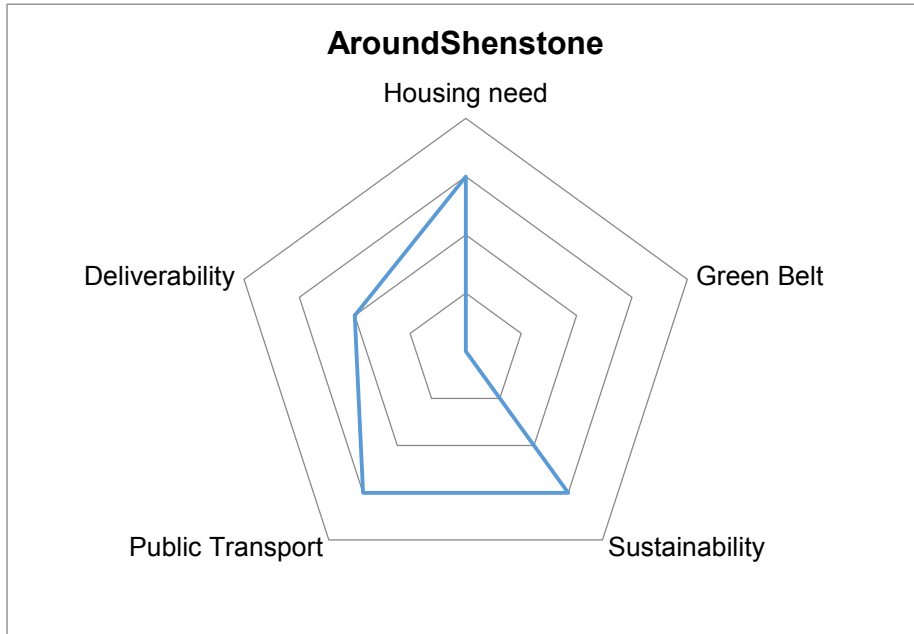
- The area is within 5km of the conurbation but beyond 2.5km and will therefore help to meet a relatively significant proportion of the need;
- Within an area making Supporting Contribution to the Green Belt purposes;
- Neutral outcome overall from Sustainability Appraisal;
- Around 6.5km to the nearest train station with a journey time of 32 minutes to Birmingham New Street; and
- Potentially more modest highways works required, but significant utilities infrastructure reinforcement required. Lower housing values.

9.81 Around Fradley and Alrewas



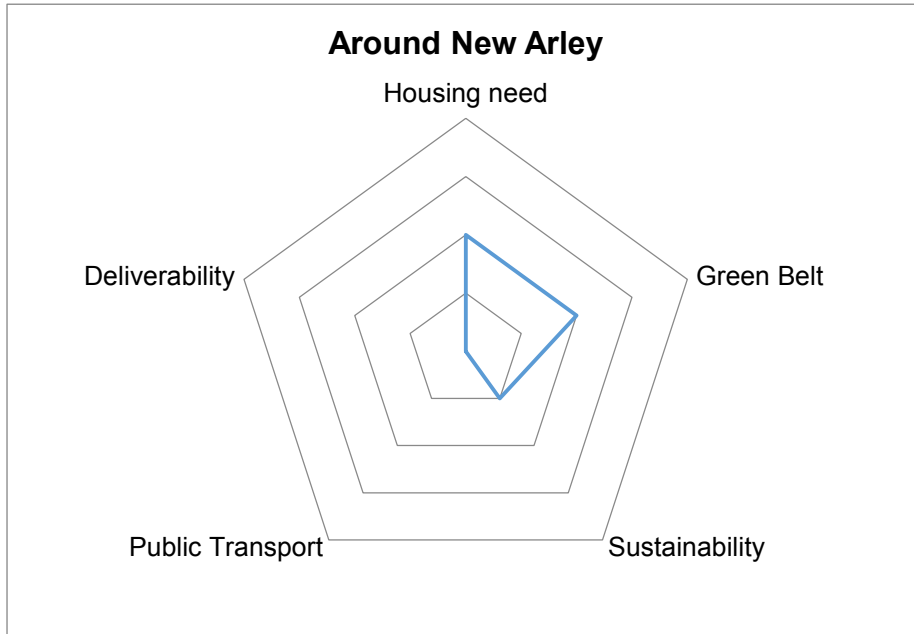
- The area is within 15km of the conurbation but beyond 10km and will therefore help to meet some of the need;
- Not in the Green Belt;
- Neutral outcome overall from Sustainability Appraisal;
- Around 4km to the nearest train station with a journey time of 40 minutes to Birmingham New Street; and
- Significant highways works required, plus delivery of new station and extension of rail service to support sustainable development. Very significant utilities infrastructure reinforcement required. Medium housing values.

9.82 Around Shenstone



- The area is within 5km of the conurbation but beyond 2.5km and will therefore help to meet a relatively significant proportion of the need;
- Wholly within an area making a Principal Contribution to Green Belt purposes;
- Positive outcome overall from Sustainability Appraisal;
- Around 1km to the nearest train station with a journey time of 30 minutes to Birmingham New Street; and
- Less significant potential highways infrastructure required relative to some other new settlement locations, however utilities infrastructure requirements significant. Reasonable housing values.

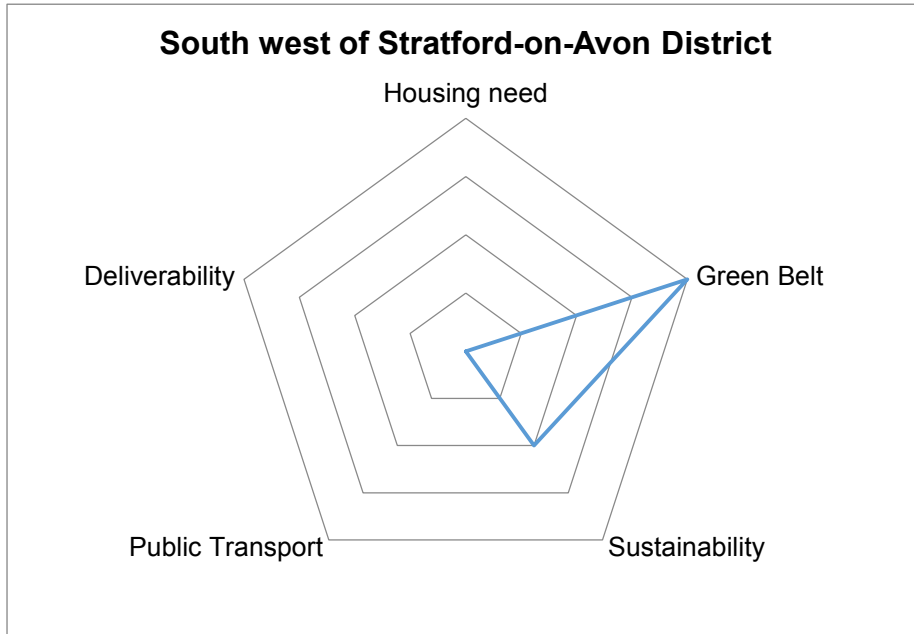
9.83 Around New Arley



- The area is within 10km of the conurbation but beyond 5km and will therefore meet a reasonable proportion of the defined need;
- Within an area making Supporting Contribution to the Green Belt purposes;
- Negative outcome overall from Sustainability Appraisal;
- Remote from any train station; and
- Significant potential highways works required with new road links to connect area to strategic road network; together with significant utilities network development/ reinforcement. Lower housing values.

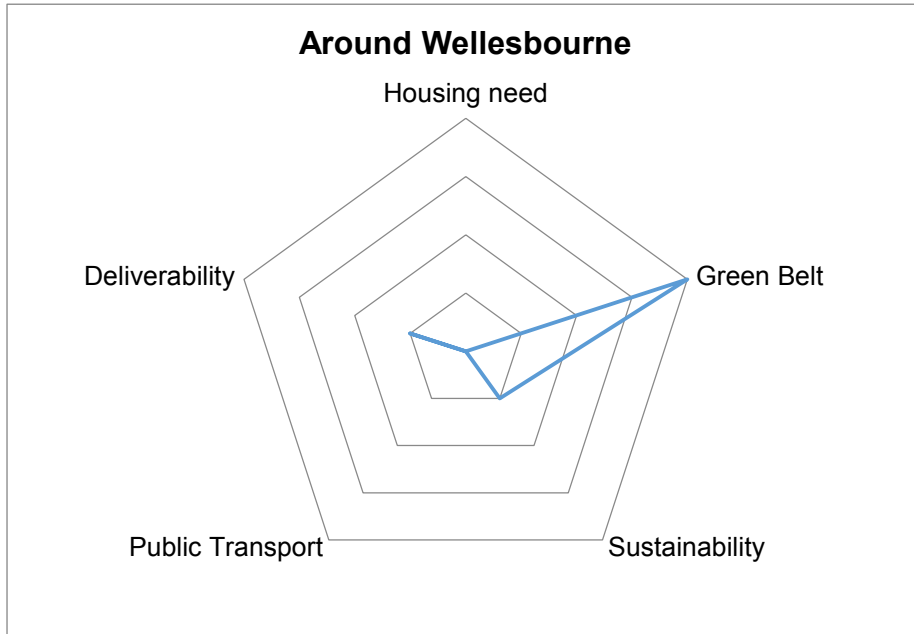
9.84 GL Hearn’s findings, as set out above, are of no effective market capacity to introduce deliver further housing provision over-and-above what is being planned for already in North Warwickshire.

9.85 South west of Stratford-on-Avon District



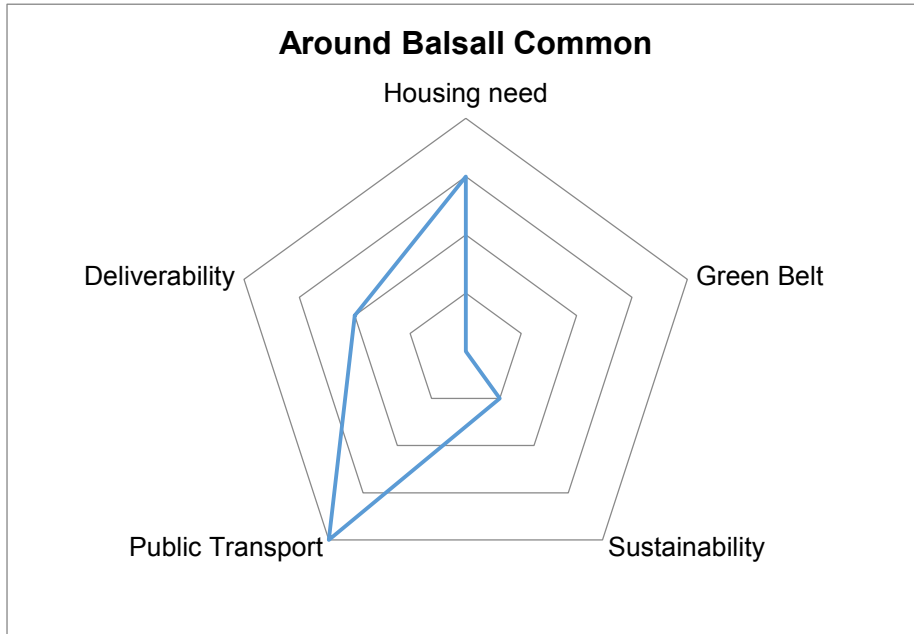
- The area is beyond 15km from the conurbation (specifically 28km) and is therefore unlikely to meet the need;
- Not in the Green Belt;
- Neutral outcome overall from Sustainability Appraisal;
- Remote from any train station; and
- At distance from major roads, with potentially significant new road infrastructure required; together with significant new utilities network infrastructure. Housing values relatively strong.

9.86 Around Wellesbourne



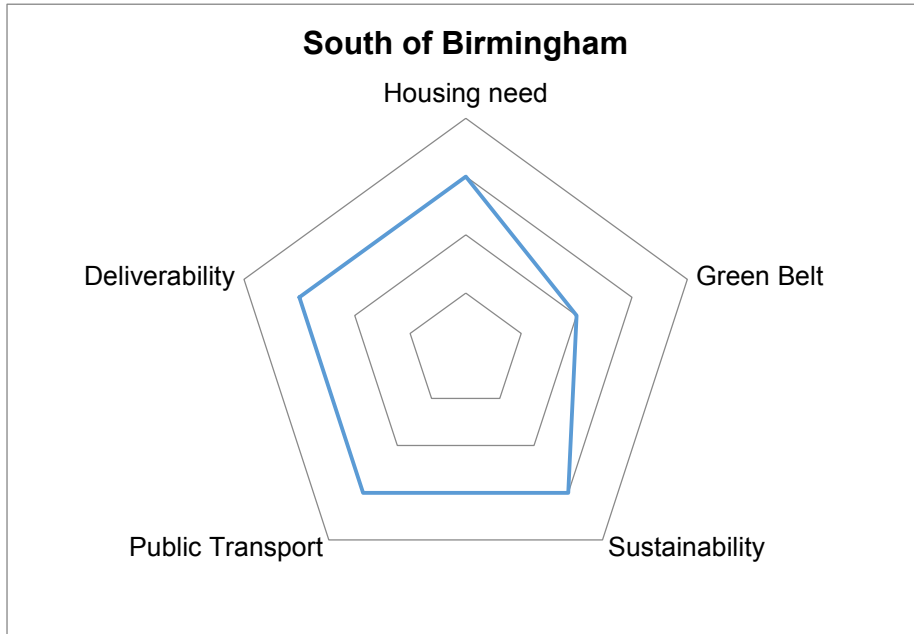
- The area is beyond 15km from the conurbation (specifically 24km) and is therefore unlikely to meet the need;
- Not in the Green Belt;
- Negative outcome overall from Sustainability Appraisal;
- Remote from any train station; and
- Reasonably significant highways and utilities infrastructure required. Strong market and residential values, but major growth already taking place at Gaydon/Lighthorne Heath which is in relative proximity.

9.87 Around Balsall Common



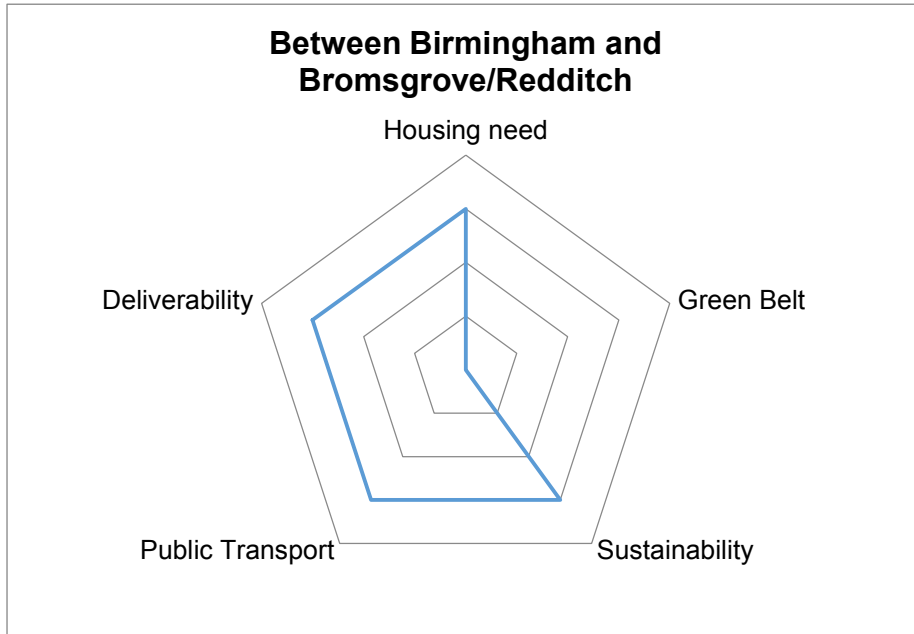
- The area is within 5km of the conurbation but beyond 2.5km and will therefore help to meet a relatively significant proportion of the need;
- Wholly within an area making a Principal Contribution to Green Belt purposes;
- Negative outcome overall from Sustainability Appraisal;
- Around 2km to the nearest train station with a journey time of 20 minutes to Birmingham New Street; and
- More modest highways infrastructure potentially required for this location relative to others however utilities infrastructure likely to be significant. Strong market and residential values, and relationship to employment centres. Scoring takes account of funding potential with major growth.

9.88 South of Birmingham



- The area is within 5km of the conurbation but beyond 2.5km and will therefore help to meet a relatively significant proportion of the need;
- Within an area making Supporting Contribution to the Green Belt purposes;
- Positive outcome overall from Sustainability Appraisal;
- Around 1km to the nearest train station with a journey time of 30 minutes to Birmingham New Street; and
- More modest highways infrastructure potentially required for this location relative to others however utilities could be significant. Strong market and residential values. Scoring takes account of funding potential with major growth.

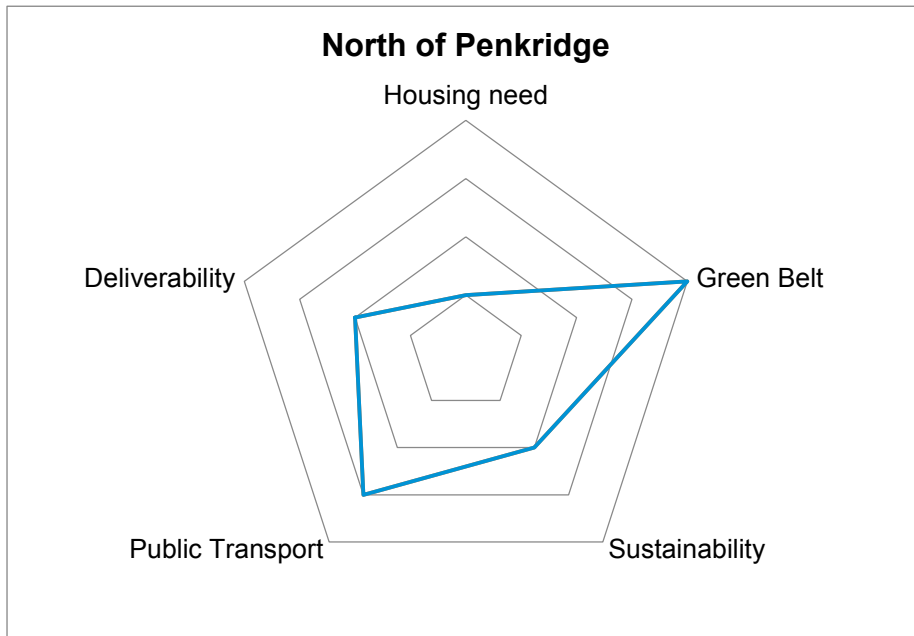
9.89 Between Birmingham and Bromsgrove/Redditch



- The area is within 5km of the conurbation but beyond 2.5km and will therefore help to meet a relatively significant proportion of the need;
- Wholly within an area making a Principal Contribution to Green Belt purposes;
- Positive outcome overall from Sustainability Appraisal;
- Around 1km to the nearest train station with a journey time of 35 minutes to Birmingham New Street; and
- More modest highways infrastructure potentially required for this location relative to others however utilities could be significant. Reasonably strong market and residential values. Scoring takes account of funding potential with major growth.

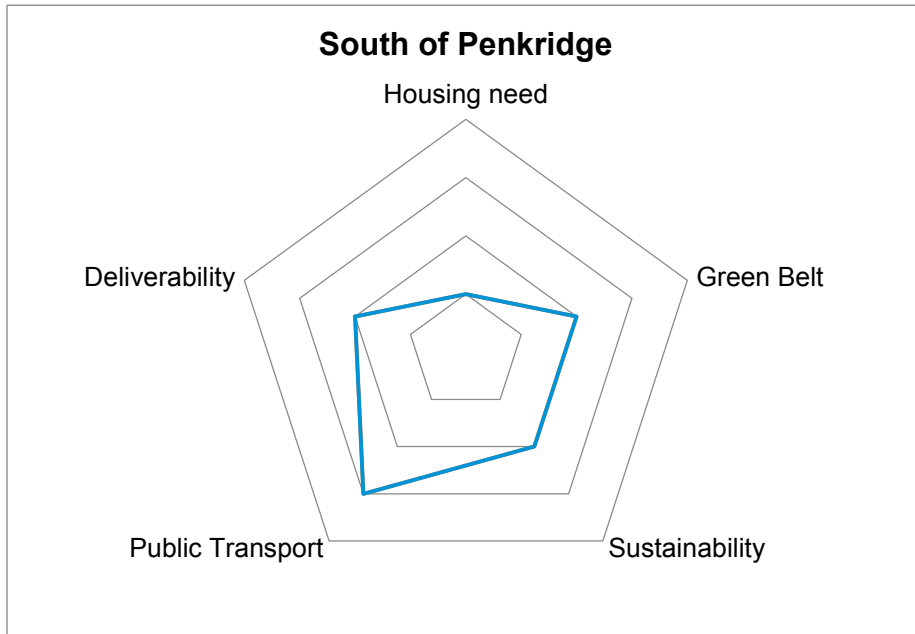
Urban Extensions

9.90 North of Penkridge



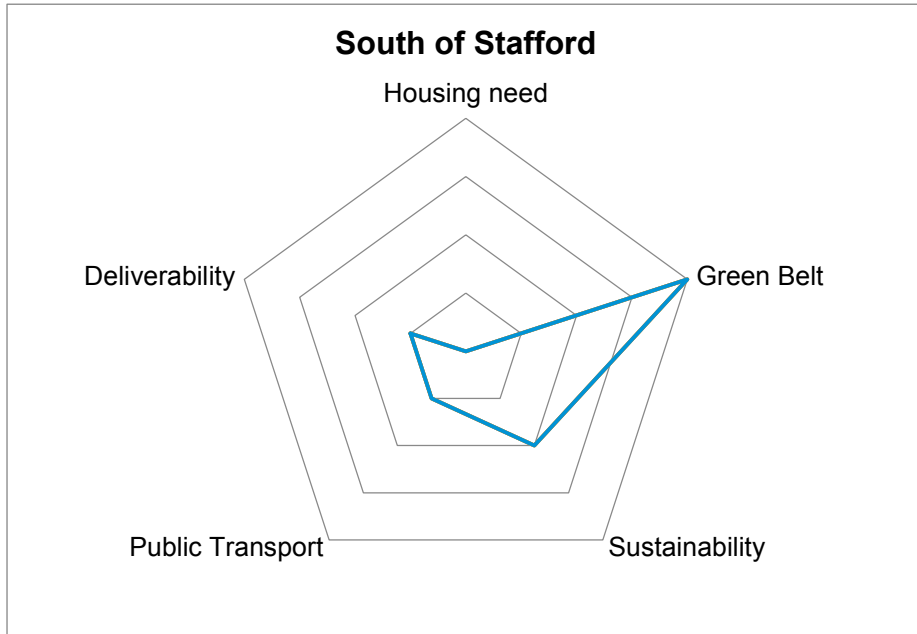
- The area is within 15km of the conurbation but beyond 10km and will therefore help to meet some of the need;
- Within an area making Supporting Contribution to the Green Belt purposes;
- Neutral outcome overall from Sustainability Appraisal;
- Around 1.5km to the nearest train station with a journey time of 32 minutes to Birmingham New Street; and
- Potentially significant highways works required to support development; together with significant utilities infrastructure reinforcement. Lower housing values.

9.91 South of Penkridge



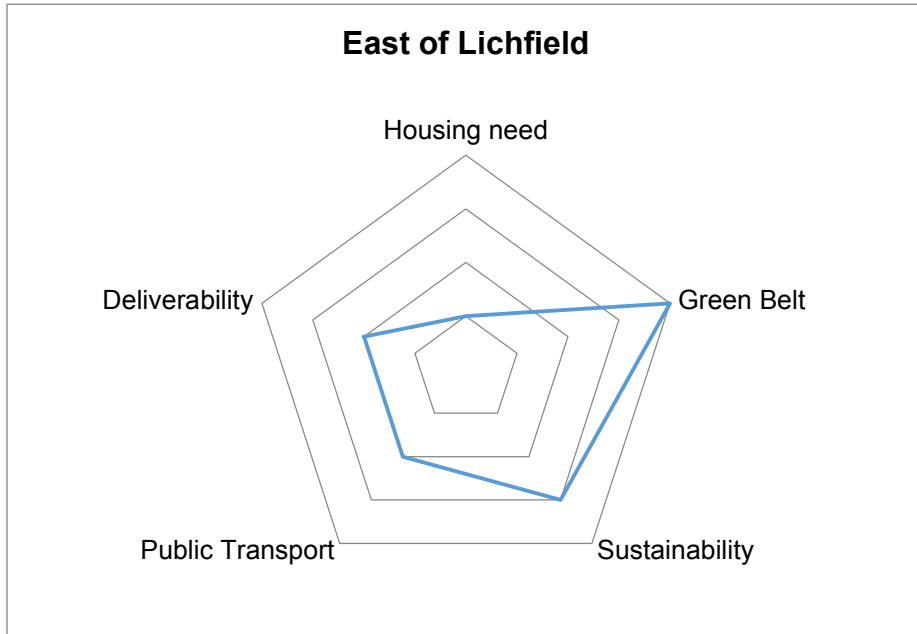
- The area is within 10km of the conurbation but beyond 5km and will therefore help to meet some of the need;
- Within an area making Supporting Contribution to the Green Belt purposes;
- Neutral outcome overall from Sustainability Appraisal;
- Around 1.5km to the nearest train station with a journey time of 32 minutes to Birmingham New Street; and
- Potentially significant highways works required to support development; together with significant utilities infrastructure reinforcement. Lower housing values.

9.92 South of Stafford



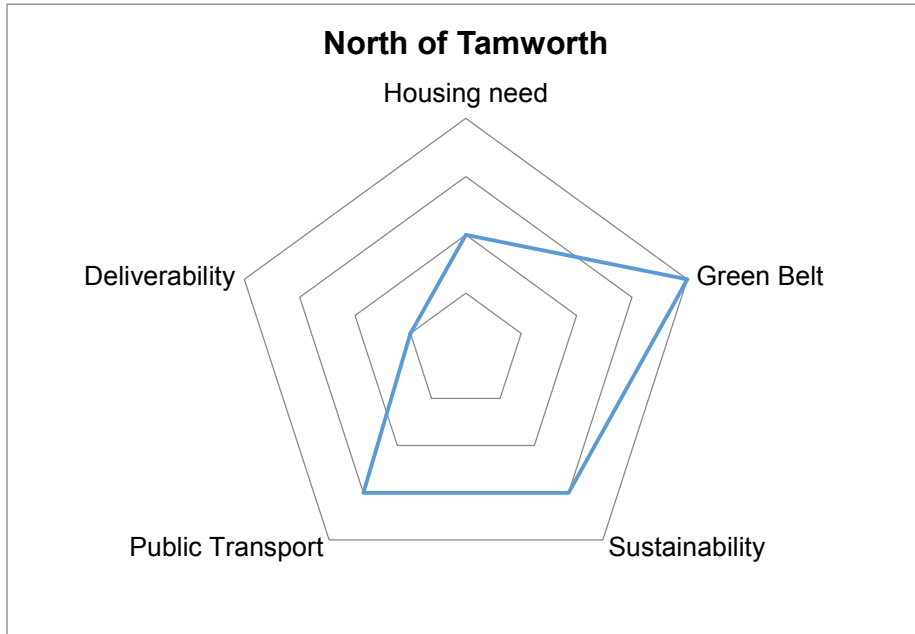
- The area is beyond 15km from the conurbation and is therefore unlikely to meet the need
- Not in the Green Belt;
- Neutral outcome overall from Sustainability Appraisal;
- Around 3km to the nearest train station with a journey time of 33 minutes to Birmingham New Street; and
- Reasonably significant highways works required, and negligible existing utilities network capacity. Significant investment required. Lower housing values.

9.93 East of Lichfield



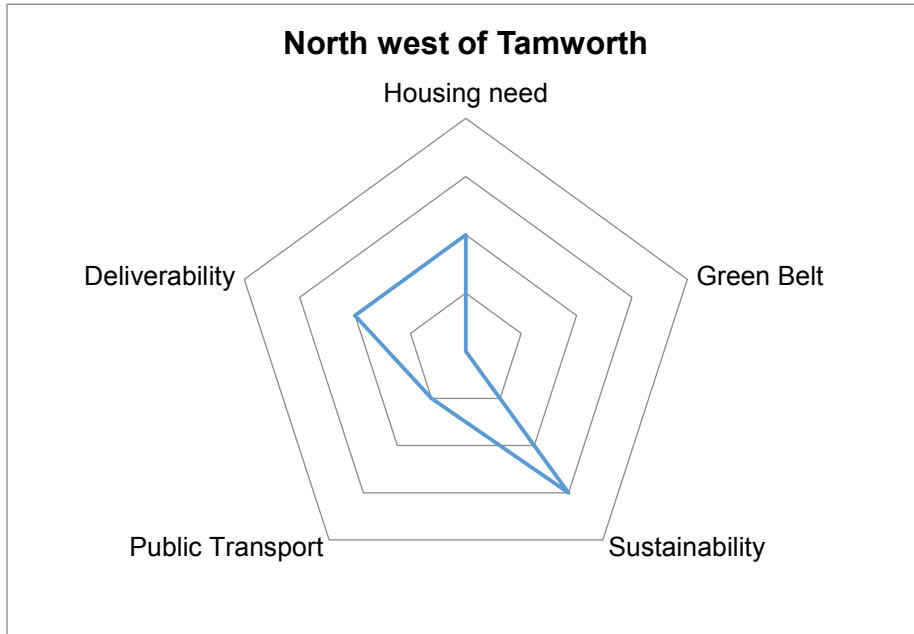
- The area is within 15km of the conurbation but beyond 10km and will therefore help to meet some of the need;
- Not in the Green Belt;
- Positive outcome overall from Sustainability Appraisal;
- Around 2km to the nearest train station with a journey time of 32 minutes to Birmingham New Street; and
- Significant highways works required. Very significant utilities infrastructure reinforcement required. Medium housing values.

9.94 North of Tamworth



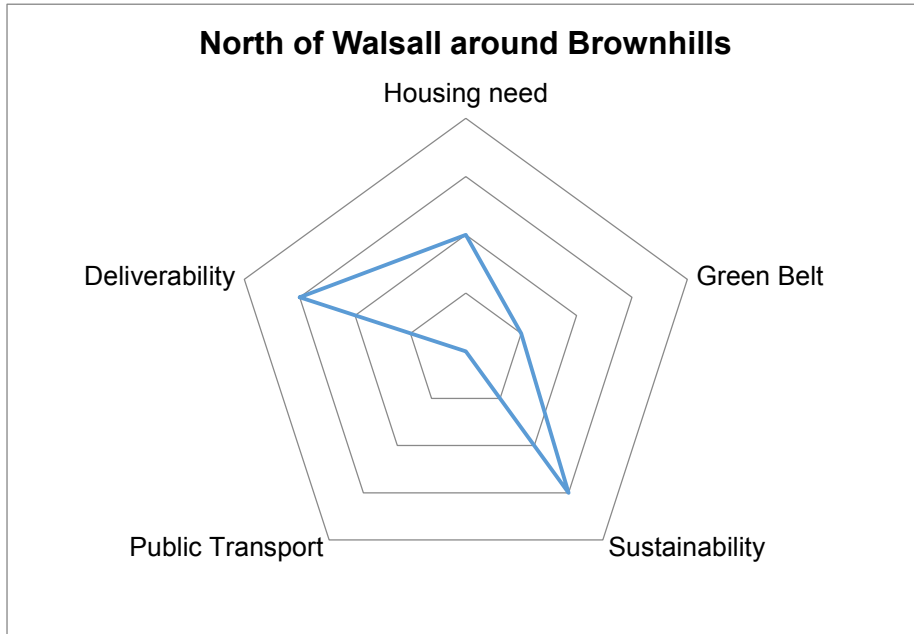
- The area is within 10km of the conurbation but beyond 5km and will therefore help to meet some of the need;
- Not in the Green Belt;
- Positive outcome overall from Sustainability Appraisal;
- Around 2km to the nearest train station with a journey time of 20 minutes to Birmingham New Street; and
- Potential requirement for new roads and junctions and enhancement of existing roads and junctions, together with significant utilities network reinforcement. Lower value market.

9.95 North West of Tamworth



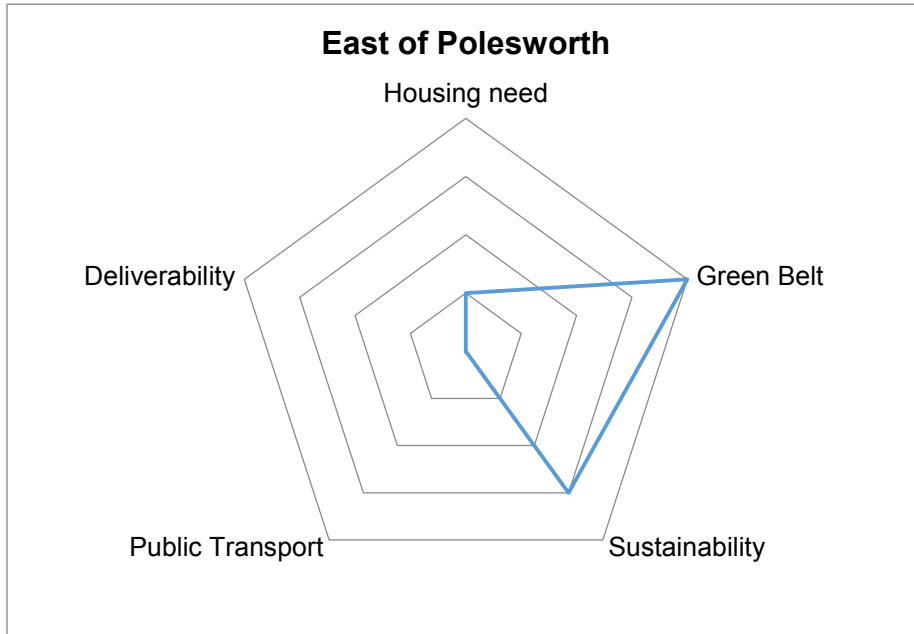
- The area is within 10km of the conurbation but beyond 5km and will therefore help to meet some of the need;
- Wholly within an area making a Principal Contribution to Green Belt purposes;
- Positive outcome overall from Sustainability Appraisal;
- Around 3.5km to the nearest train station with a journey time of 20 minutes to Birmingham New Street; and
- Some highways investment required together with significant utilities network reinforcement. Lower value market.

9.96 North of Walsall around Brownhills



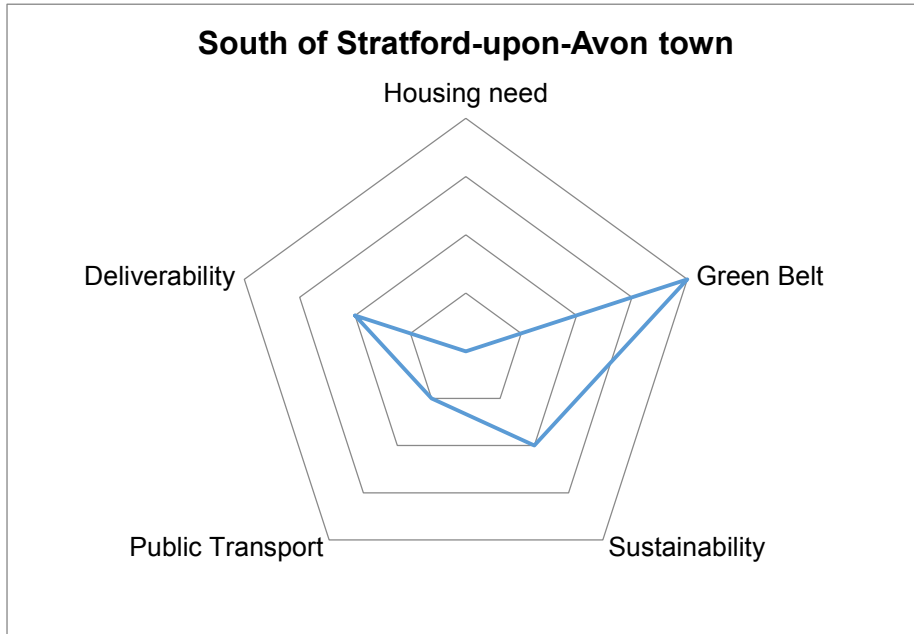
- The area is within 10km of the conurbation but beyond 5km and will therefore help to meet some of the need;
- Partially within an area making a Principal Contribution to Green Belt purposes;
- Positive outcome overall from Sustainability Appraisal;
- Remote from any train station; and
- Relatively modest highways works required relative to other options; but upgrading of utilities infrastructure. Medium residential values.

9.97 East of Polesworth



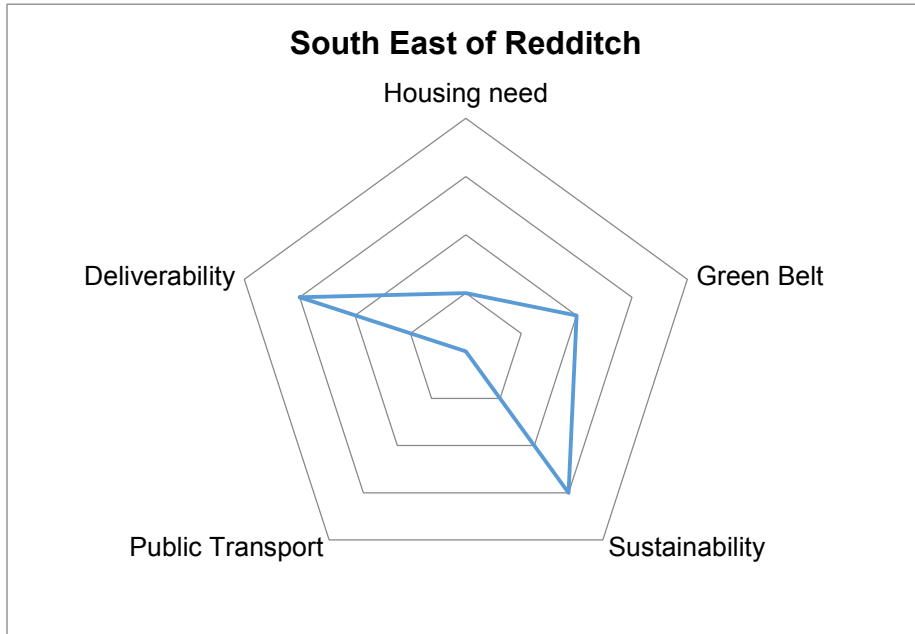
- The area is within 15km of the conurbation but beyond 10km and will therefore help to meet some of the need;
- Not in the Green Belt;
- Positive outcome overall from Sustainability Appraisal;
- Around 1km to the nearest train station with a journey time of 30 minutes to Birmingham New Street; and
- Improvements required to A5 to support development in this area, together with significant investment in rail service and provision of access over West Coast Main Line. Lower value market.

9.98 South of Stratford-upon-Avon town



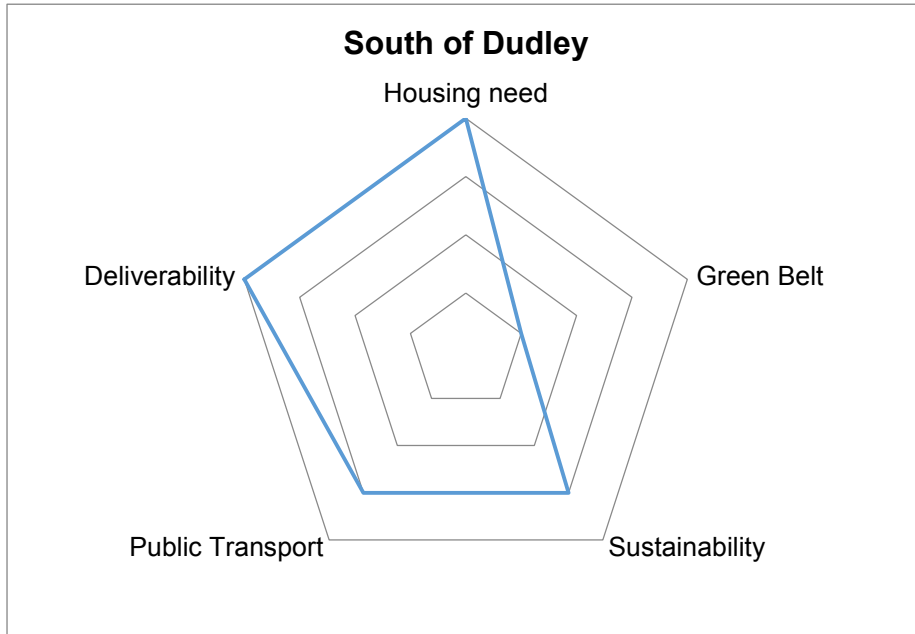
- The area is beyond 15km from the conurbation and is therefore unlikely to meet the need;
- Not in the Green Belt;
- Neutral outcome overall from Sustainability Appraisal;
- Around 1.5km to the nearest train station with a journey time of 50 minutes to Birmingham Snow Hill; and
- Relatively modest utilities network costs, but potential requirement for relief road. Higher value housing market.

9.99 South east of Redditch



- The area is within 15km of the conurbation but beyond 10km and will therefore help to meet some of the need;
- Within an area making Supporting Contribution to the Green Belt purposes;
- Positive outcome overall from Sustainability Appraisal;
- Around 5km to the nearest train station with a journey time of 40 minutes to Birmingham New Street; and
- Reasonable existing infrastructure provision with more modest improvements required than other options. Medium residential values.

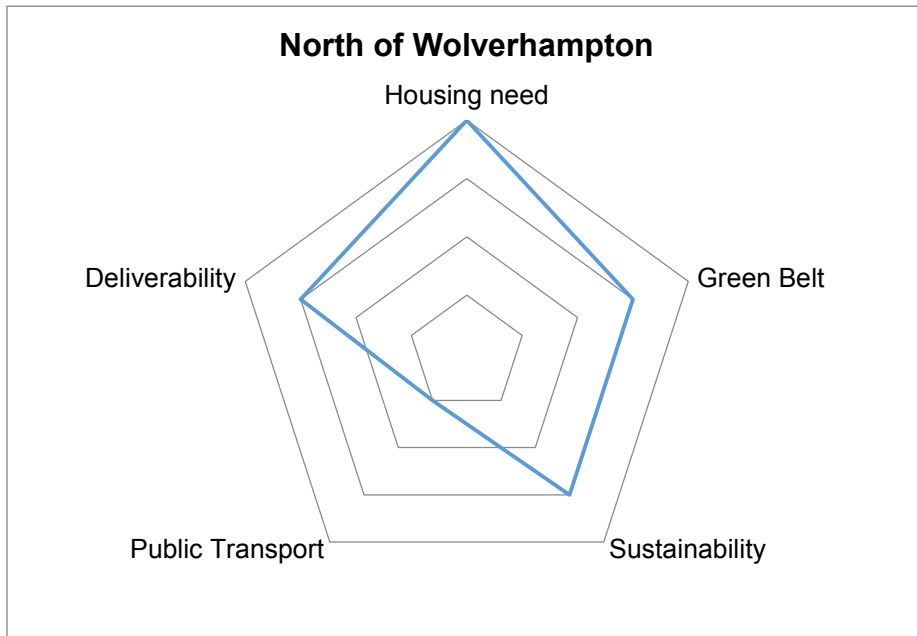
9.100 South of Dudley



- This area is within 2.5km of the conurbation and will therefore directly help to meet the need;
- Partially within an area making a Principal Contribution to Green Belt purposes;
- Positive outcome overall from Sustainability Appraisal;
- Around 2km to the nearest train station with a journey time of 30 minutes to Birmingham New Street; and
- Modest additional highways works required together with modest additional utilities infrastructure.

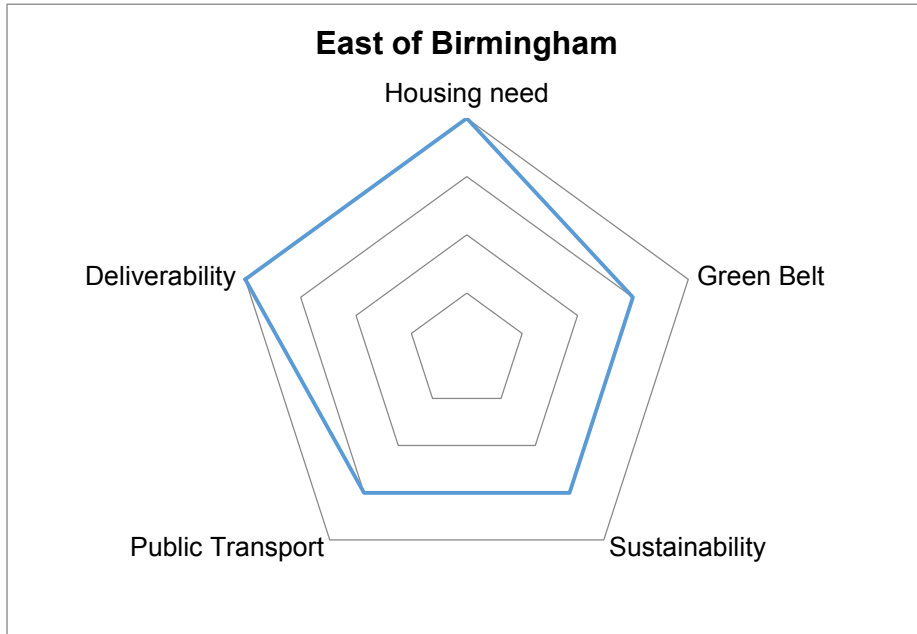
Employment-Led

9.101 North of Wolverhampton



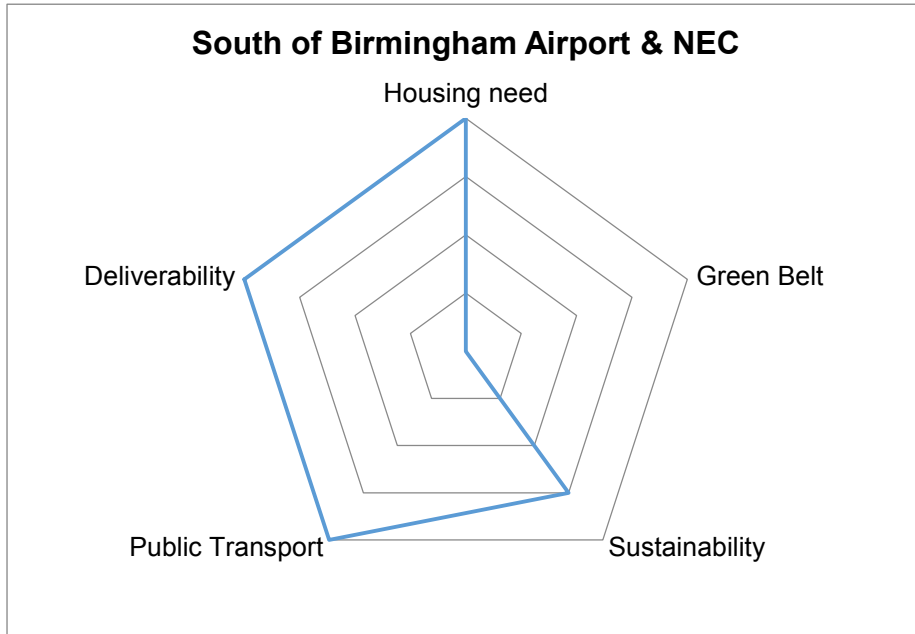
- This area is within 2.5km of the conurbation and will therefore directly help to meet the need;
- Partially within an area making a Principal Contribution to Green Belt purposes;
- Positive outcome overall from Sustainability Appraisal;
- Around 3.5km to the nearest train station with a journey time of 26 minutes to Birmingham New Street; and
- Area benefits from recent infrastructure investment. Some utilities reinforcement likely required. Area of lower values.

9.102 East of Birmingham



- This area is within 2.5km of the conurbation and will therefore directly help to meet the need;
- Partially within an area making a Principal Contribution to Green Belt purposes;
- Positive outcome overall from Sustainability Appraisal;
- Around 1.5km to the nearest train station with a journey time of 15 minutes to Birmingham New Street; and
- Reasonably modest highways infrastructure required. Close to primary utilities network, meaning primary reinforcement required.

9.103 South of Birmingham Airport & the NEC



- This area is within 2.5km of the conurbation and will therefore directly help to meet the need;
- Wholly within an area making a Principal Contribution to Green Belt purposes;
- Positive outcome overall from Sustainability Appraisal;
- Around 1km to the nearest train station with a journey time of 10 minutes to Birmingham New Street; and
- Modest additional highways works required together with modest additional utilities infrastructure. Area of higher residential values. Major development in this area will support infrastructure provision.

10 CONCLUSIONS AND NEXT STEPS

Housing Need Parameters

- 10.1 Over the 2011-31 period, the updated evidence presented in this report shows a baseline or minimum housing need for 205,000 homes. This would support trend-based demographic projections and economic growth. However delivery of the higher Economy Plus scenario, as set out in the West Midlands Combined Authority's Strategic Economic Plan, would require higher provision of 246,000 homes to 2031. To 2036, a baseline or minimum need for 255,000 dwellings is shown; with the Economy Plus Scenario requiring additional in-migration result in a need for 310,000 homes (2011-36).
- 10.2 GL Hearn conclude that on the basis of the current evidence, provision of between 205,000 – 246,000 homes across the Birmingham HMA to 2031; and 256,000 – 310,000 homes to 2036 (from a 2011 baseline) to meet the Birmingham HMA's housing needs.
- 10.3 The Economy Plus Scenario is clearly a policy-driven scenario for employment growth which is aspirational in nature, seeking to achieve stronger relative economic performance than has been seen historically. There are questions for the authorities to collectively consider regarding the degree to which this growth is desirable, sustainable and achievable. Set against this, it should however be borne in mind that planning for demographic needs only should really be regarded as a *minimum* level of housing provision, and there is a clear basis in national policy for seeking to deliver additional housing provision over-and-above this to support long-term improvements in the affordability of housing.
- 10.4 The Government's proposed standardised methodology shows a need, based on existing data for 187,800 homes to 2031 and 239,300 homes to 2036; with the uncapped figures indicating a need for 206,800 homes to 2031 and 264,600 homes to 2036.
- 10.5 Alongside the HMA's housing needs, it needs to be borne in mind that North Warwickshire and Stratford-on-Avon Districts fall within two housing market areas, and these authorities are making provision for meeting Coventry's unmet housing needs. This should be captured in drawing conclusions on housing need across the Birmingham HMA.
- 10.6 In considering supply across the Birmingham HMA as a whole, this report therefore identifies that a minimum provision of 208,000 dwellings to 2031, and 258,500 homes to 2036 is needed.

Housing Land Supply Baseline

- 10.7 A review of land supply across the Housing Market Area has been undertaken. GL Hearn has sought to provide a consistent position on land supply, and to make some provision for delays or

non-implementation which are inevitably likely to occur to some extent. It would not be robust to assume that every site or plot of land identified on paper now would be developed and built-out within the timescales considered herein.

- 10.8 The analysis indicates that based on current supply assumptions; there is a developable land supply of around 180,000 dwellings to 2031 and 197,000 dwellings to 2036. This takes into account proposed allocations in emerging plans, including site allocations plans and the strategic plans under development in North Warwickshire and Solihull, and assumes delivery of these.
- 10.9 **Bringing together the need and currently identified supply, there is an outstanding minimum shortfall of 28,150 dwellings to 2031 and 60,900 dwellings to 2036 across the Birmingham HMA.**

Table 65: Minimum Shortfall in Housing to 2031 and 2036

	2011-31	2011-36
Minimum Housing Need	205,099	254,873
C/W Unmet Need	2,880	3,600
Supply Baseline	179,829	197,618
Min. Shortfall	28,150	60,855

Potential Additional Urban Supply

- 10.10 GL Hearn has investigated the potential to bring forward additional supply within urban areas, including through brownfield sites, estate regeneration, and surplus public sector land. Where these opportunities are known and exist, they have been included within the baseline land supply figures.
- 10.11 Inevitably there are probably modest additional development opportunities which could result from further work interrogating potential from these sources. Land supply figures are however constantly in a state of flux as new brownfield land becomes available and other sites are developed or lost to alternative uses. The supply which could result from the further areas identified should be considered further alongside the investigation of potential from the areas of search for strategic development identified in this report. However based on the work undertaken GL Hearn's considers that the scale of additional potential which these sources of supply will yield will not preclude the need for strategic development options to be identified and brought forward.

Increasing Urban Development Densities

- 10.12 GL Hearn has sought to test through the Study the potential to increase residential development densities. Building new housing at higher densities is an important potential component to addressing the shortfall in housing provision across the HMA. It not only makes more efficient use

of land, but can help to deliver high quality sustainable development and good quality places. With careful planning and good design, higher density development can help create successful places, with a range of house types, good space standards and an attractive public realm. They can help to create places with a mix of uses, where public transport provision is viable and can support local services.

- 10.13 The analysis undertaken has tested what densities could be achieved by applying the following minimum densities (floor thresholds):
- Rural Areas: 30 dwellings per hectare
 - Suburban Locations: 40 dph
 - Town and District Centres: 50 dph
 - Birmingham City Centre: 100 dph
- 10.14 It quantifies the potential impact which this could have if applied to all sites, large and small, without planning consent.
- 10.15 Based on the analysis undertaken, GL Hearn concludes that it would be reasonable to assume minimum densities of 40 dph are achieved in the conurbation (Birmingham and the Black Country urban area), with minimum densities of 35 dph in other parts of the HMA. **On this basis, increasing densities could potentially yield additional supply of 13,000 dwellings, principally over the period to 2031. This is a significant contribution to meeting the housing shortfall.** This is the working assumption on the contribution to supply which increasing densities could make.
- 10.16 These densities need to be applied through the review of development management policies/ guidance at appropriate, in the review of SHLAAs and through development management decisions. In applying the density standards set out, consideration should be given to site characteristics and the local context, as well as Councils' evidence base on the need for different types/ sizes of homes; but being clear that in the context of an unmet housing need this does not necessarily mean necessarily building at existing local densities.
- 10.17 It will be important that the local authorities seek to maximise the density which can be achieved in individual development schemes, taking account of the site characteristics, local context, nature of local housing demand and viability. GL Hearn's estimates of the supply which can be achieved from this source take account of the nature of market demand and what can realistically be achieved given market dynamics and viability.

Identifying and allocating additional land

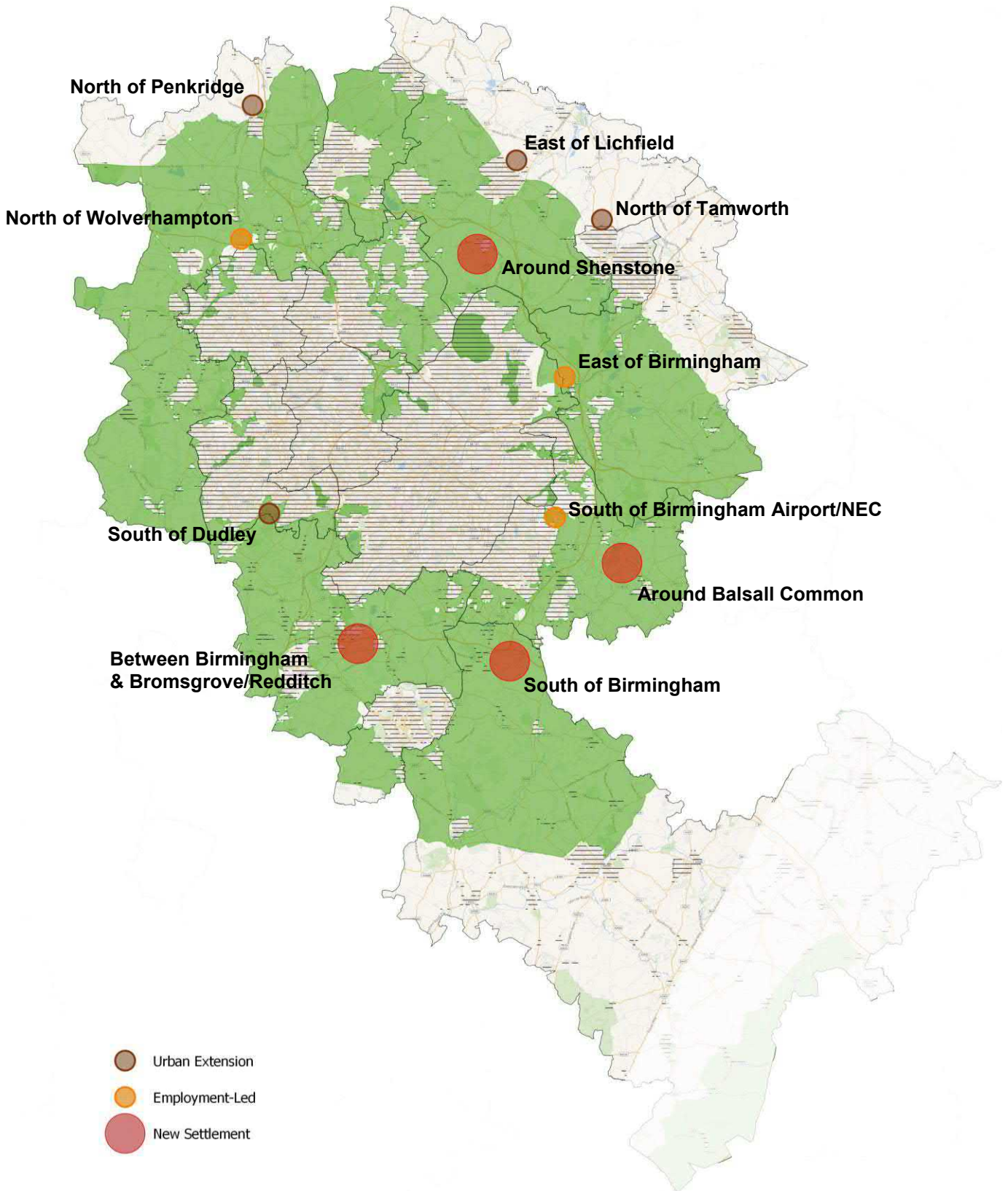
- 10.18 Taking into account the potential housing supply which could be achieved by increasing densities, there remains a need to identify capable of supporting delivery of over 15,000 homes to 2031, and a total of over 47,800 homes to 2036. Additional land needs to be identified and allocated to meet this. This provides a clear basis for progressing a strategic review of the Birmingham Green Belt and considering land available within the HMA but beyond the Green Belt to inform councils plan-making activities.
- 10.19 Alongside this, councils within the HMA will need to progress work to identify small and medium-sized sites which can contribute to meeting the housing needs shortfall through the preparation of local plans. This process will include identifying additional smaller sites beyond the Green Belt through SHLAAs and local Green Belt assessments considering the performance of sites against green belt purposes at a finer grain. Small and medium-sized development opportunities arising from this work will play an important contribution in meeting the housing needs shortfall, particularly in the short- and medium-term.
- 10.20 The report demonstrates clearly that some development is needed outside urban areas. As a result, the report moves on to consider further options for meeting the outstanding shortfall in housing land. The PBA Stage 3 Study identified a number of development models for addressing the shortfall. These have been considered further in this report.
- 10.21 The solution to meeting the housing need shortfall will clearly require a multi-faceted response, including not just maximising urban supply and accelerating the delivery of this, but the identification of further development land and the progression of local Green Belt reviews. This should reasonably include sites of a range of sizes including smaller extensions to settlements of less than 2,500 homes, together with the identification and delivery of larger strategic development locations. This Study has sought to identify and shortlist potential Areas of Search for strategic development locations on a consistent basis across the HMA.

Areas of Search for Strategic Development

- 10.22 Given the scale of unmet need and the strategic nature of this Study, it has focused on considering strategic development options for addressing the housing needs shortfall, in terms of considering Areas of Search which could potentially (subject to further investigation) support development of 1,500+ homes. It considers options for accommodating the following:
- Urban Extensions (1,500 - 7,500 dwellings);
 - Employment-led Strategic Development (1,500 – 7,500 dwellings); and
 - New Settlements (10,000+ dwellings).
- 10.23 The models are used to help guide where development could, in principle, be located taking account of geography (landscape character, land use, drainage and topography), nationally-significant development constraints as listed in Footnote 9 in the NPPF, and the strategic transport network (road and rail). These issues have considered for areas both within and beyond the Green Belt.
- 10.24 Twenty-four Areas of Search for strategic development have been identified. Our assessment has sought to draw out the comparative merits from a strategic high-level assessment, across five key factors:
- The contribution to meeting housing needs
 - Contribution to Green Belt purposes
 - Sustainability
 - Public transport accessibility, particularly by rail
 - Comparative deliverability.
- 10.25 The results of this assessment were presented in Section 9. Each of the three employment-led options perform strongly against the range of criteria. These potentially offer the opportunity for some residential development alongside employment. These options relate to development in the following Areas of Search:
- North of Wolverhampton/ i54
 - East of Birmingham
 - South of Birmingham Airport/ NEC
- 10.26 Drawing together the analysis in Section 9, the consultancy team consider that the strongest performing urban extension options which should be taken forward for more detailed consideration by the HMA authorities are:
- South of Dudley
 - North of Tamworth
 - East of Lichfield
 - North of Penkridge

- 10.27 The area south of Dudley falls partially or fully within areas which make a principal contribution to Green Belt purposes, but against other criteria perform very strongly. There are notable infrastructure issues associated with development in a number of these areas which will require further consideration.
- 10.28 The consultancy team considers that new settlements should also form part of the solution to meeting the housing shortfall, recognising that whilst they will require significant infrastructure, they can contribute positively to meeting longer-term development needs against a context whereby a significant proportion of the HMA housing need shortfall relates to the period beyond 2031; and they provide the opportunity to secure significant funding support from Government given their scale and impact. The areas of search for new settlements which perform strongest, and we recommend should be taken forward for further assessment are:
- South of Birmingham
 - Between Birmingham and Bromsgrove
 - Around Shenstone
 - Around Balsall Common
- 10.29 Of these however, the latter three all fall in locations which are identified as making a principal contribution to Green Belt.
- 10.30 There are clear choices to be made regarding what weight in decision-making is attributed to different factors which warrant joint consideration by HMA partners.
- 10.31 There are also interactions between areas for strategic development which are taken forward. Taking South Staffordshire as an example, that the cumulative effects of (for example) of an urban extension coming forward South of Penkridge may affect the ability of a new settlement in a nearby location, and visa-versa.
- 10.32 For the strategic development locations identified, further work will need to be progressed in assessing constraints and opportunities at a more local level, including the form and scale of development, infrastructure requirements, feasibility and delivery issues through individual local plan processes. This is considered further below.

Figure 41: Recommended Areas of Search for Strategic Development



Moving Forwards

- 10.33 Taking forward locations identified as Areas of Search for Strategic Development will require further work to be undertaken to assess their feasibility, the scale of development which could be accommodated and delivery timescales.
- 10.34 GL Hearn envisage that this would need to involve technical studies/ analysis considering:
- Landownership
 - Transport Assessment
 - Utilities Infrastructure Assessments
 - Detailed Green Belt Studies (where appropriate)
 - Landscape Capacity Assessments
 - Phase 1 Habitats Survey
 - Flood Risk Assessment
 - Desktop Ground Investigations
 - Employment Potential Study
 - Social Infrastructure Assessment
 - Green Infrastructure Assessment
- 10.35 Technical evidence will need to be brought together through the plan-making process with a level of masterplanning, which considers potential growth options and engagement with the local community.
- 10.36 Progression of transport and utilities assessments, landscape and green belt assessment and landownership should in particular be taken forward as a priority. The transport analysis should consider, taking account of other growth proposed within a plan, what infrastructure is required to support strategic growth, the technical feasibility and cost of this. Engagement with utilities providers should assess specific requirements for reinforcement or upgrading of existing infrastructure and how this could feed into providers' asset management plans.
- 10.37 A masterplanning process would consider potential development locations and the land use mix (informed by technical studies above), including appropriate locations for housing; employment additional social infrastructure and services; and green infrastructure. Technical analysis regarding green belt, ecology, landscape, flood risk, landownership and ground conditions would be needed to inform this.
- 10.38 Concept masterplanning could consider alternative options for the scale and locations of development, and the associated impact and benefits of each. This would then be subject to refinement through community and stakeholder engagement, and as appropriate further technical analysis. This includes through engagement with local communities, as well as statutory consultees.

10.39 Further engagement will also be necessary with service providers as options are developed and refined. This includes with the highways authority, and with utilities providers (electricity, gas, water supply and waste water) in understanding existing infrastructure; capacity assessment for the existing network; and options, costs and timeframes for reinforcement of existing infrastructure and/or delivery of additional infrastructure.

10.40 The cost of infrastructure and cash flow issues will inform the delivery model and funding requirements. For large-scale strategic developments such as the new settlements, it may be appropriate to consider whether a delivery vehicle should be set up to take these forwards.

Addressing the Housing Needs Shortfall

10.41 To address the housing needs shortfall, it is important that housing requirement figures (targets) within local plans are amended and make provision for addressing unmet housing needs.

10.42 The initial task is to address the unmet need to 2031. The evidence suggests that the land supply position based on current evidence indicates a residual need to identify further opportunities for housing development. A minimum shortfall of 28,150 dwellings is shown.

10.43 Our analysis indicates that by implementing minimum density thresholds through planning policy, and following this through in development management decisions, increases in development densities could potentially contribute 13,000 homes to addressing the housing needs shortfall.

10.44 This report demonstrates clearly that additional land for residential development needs to be identified to meet development needs to 2031. GL Hearn considers that a range of small and medium-sized development schemes of up to 2,500 homes, will make a principal contribution to this as well as other smaller scale development opportunities. This is likely to include a need for such sites both within and beyond the Green belt.

10.45 It is assumed that smaller scale development opportunities will be defined through individual local plan processes. It will be for local authorities to consider proportionate dispersal and other small scale development opportunities outside of this range in these terms, both within and beyond the Green Belt, taking account of a wide range of local constraints and site opportunities, through the preparation of individual local plans and local Green Belt reviews.

10.46 GL Hearn would expect larger strategic development options to make some contribution to meeting the housing needs shortfall to 2031, but principally through the delivery of urban extensions which would contribute to housing delivery from the mid 2020s onwards.

- 10.47 Based on the evidence within this report, it does look likely that the HMA's housing needs to 2031 can be met in full within the Housing Market Area. Besides the Green Belt, there is relatively modest coverage of nationally-significant strategic development constraints in the HMA.
- 10.48 In addition to this, there is a need to identify additional land to cater for development needs between 2031-36. There is a minimum shortfall of 32,700 homes over this period.⁵¹ Proportionate dispersal sites, and other smaller sites, will be able to meet some of this requirement, in line with the rates expected for the period up to 2031. There is a need for new strategic development options to be identified in particular to address housing needs over this period and beyond. If a number of strategic development options are taken forward there is the theoretical potential to meet the HMA's development needs in full.
- 10.49 There is typically a significant lead-in time to delivery of large strategic development sites, given the requirements for technical work, masterplanning, establishing the policy framework, progressing planning applications, and bringing forward development and infrastructure. This can take 10+ years. Taking this into account, there is a need to progress further technical and feasibility studies considering the potential for strategic development in these areas now.

⁵¹ This is based on subtracting the 28,150 shortfall 2011-31 from the 60,855 shortfall 2011-36, as set out in Table 65