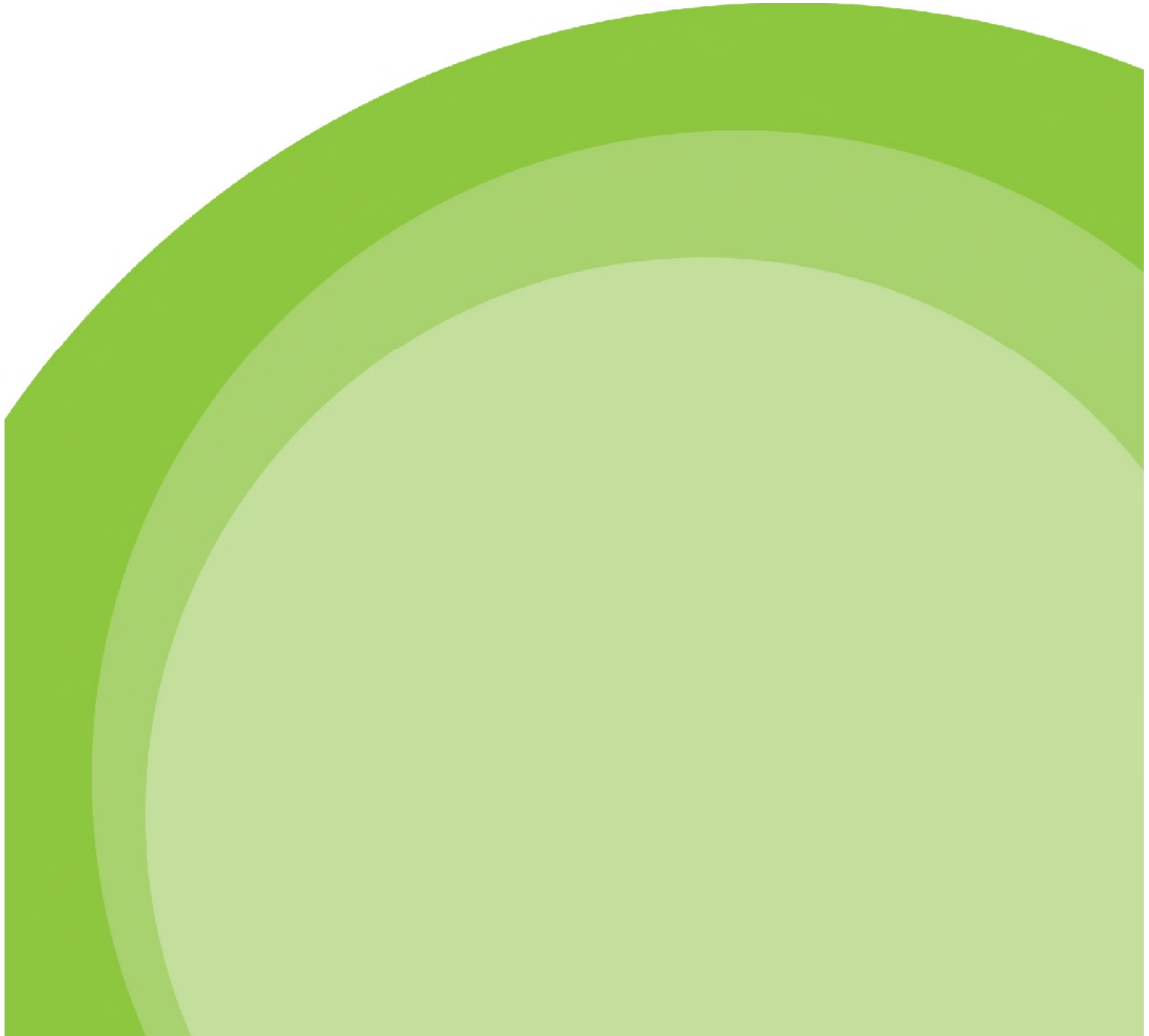




North Central Bedfordshire Growth Options Study

July 2017



Central Bedfordshire Council : North Growth Options Study

1. Introduction

- 1.1 This is a Central Bedfordshire Council technical document which has been produced in support of the Local Plan 2015-2035. It is part of the evidence base required to underpin the statutory plan making process and provides an independent review of growth options within Central Bedfordshire. The study was undertaken by Land Use Consultants (LUC) and covers the north area of Central Bedfordshire.
- 1.2 This study sits alongside the Luton Housing Market Area (HMA) Growth Options Study and relates to the Milton Keynes, Bedford and Stevenage HMA areas that sit within Central Bedfordshire. The methodologies for the two studies have purposely been kept the same to provide consistency and to ensure they can be read in conjunction with each other. However, studies being undertaken external to the Council have identified the potential for significant infrastructure development in the North of Central Bedfordshire, such as the corridor for the Central Section of the East West Rail route, a new expressway and upgrades to the A1, and therefore this study has an additional transportation element included within it.
- 1.3 The study, which should not be read as a stand alone document, is a high level assessment, the aim of which is to identify possible locations for housing growth based on a limited number of factors. There are a number of other technical studies that will ultimately help identify development options taken forward within the Local Plan.
- 1.4 This study therefore forms part of the extensive evidence base of technical reports that will inform the Central Bedfordshire Local Plan (2015 to 2035).

2. Executive Summary and Key Findings

- 2.1 Central Bedfordshire Council undertook the North Growth Options Study as a complementary study to the Luton HMA Growth Options Study.
- 2.2 The aim of the Growth Options Study is to identify and assess at a high level, potential options to help meet housing need within the north of Central Bedfordshire, in terms of their “deliverability” which is defined as including proximity to basic services, required new infrastructure being delivered in the vicinity of the site and expected demand for housing. The study also provides an assessment of the capacity for all types of housing (market and affordable) based on assumed densities. This does not mean the potential locations could necessarily come forward at these densities as this will be need to be subject to more detailed master planning. It is also important to note that the overall capacity of the locations identified within the study through this process, far exceeds that which will be required within the plan.
- 2.3 The identification of a location as high or medium performance does not therefore mean that they will ultimately be taken forward within the local plan. Further technical work will determine which locations may be taken forward as options within the local plan and at what level of growth at each of the locations would be appropriate and sustainable given a wider range of factors.

- 2.4 The locations within Central Bedfordshire that have been assessed through the study were identified through the councils' call for sites and Strategic Housing Land Availability Assessment (SHLAA) processes, and then grouped together, having been spatially mapped, to identify strategic scale locations for assessment. Where it was considered appropriate, 'gaps' between sites have been included within the identification of a location in order to ensure the full potential of the location has been considered. A sense check was also undertaken to identify 'missing sites' that had not been submitted through the Call for Sites process so as to ensure that all potential locations within the north of central Bedfordshire were included within the study¹. The Study considers a number of strategic locations across the three HMA's. It is important again to note that the Council received a significant number of sites which far exceed the capacity of CBC to accommodate. The exact quantum of development at any selected location requires more thorough assessment.
- 2.5 The study narrowed down the number of locations by removing any sites/locations that were situated within areas of primary constraint, such as areas of high flood risk, as well as smaller sites that were isolated and could not be grouped to form larger strategic options. 30 locations across the three HMA's were taken forward within the study and considered in relation to secondary environmental constraints; access to existing and potential new services and facilities and transport accessibility.
- 2.6 The locations were also assessed for their "deliverability", which considered non-financial factors that may help or limit the site being brought forward such as land availability. Deliverability was also assessed based on the prospect of the entirety of the location being delivered at the assumed size, type of development and dwelling capacity. The locations were also assessed for viability which primarily considered the financial viability of the site based on the likely cost of bringing the site forward, the number of dwellings that could be delivered and the likely sales value of those dwellings.
- 2.7 Studies are currently being undertaken external to the Council in relation to potential new transport infrastructure, some of which could be delivered within Central Bedfordshire. Potential new transport infrastructure being considered through these studies include the central section of the East West Railway, a new east-west Expressway and improvements to the A1 corridor. The additional transportation work undertaken as part of this study sought to identify if the proposed improved transport infrastructure within the area, could unlock land that is currently less accessible in order to deliver greater levels of sustainable growth. The transport assessment also had a particular focus not only on access to sustainable forms of transport but also accessibility to jobs. The locations closest to Milton Keynes have therefore predominantly scored high due to their access to the strategic road network and their proximity to current employment opportunities.
- 2.8 The study identifies that whilst the proposed infrastructure improvements will help deliver higher levels of growth, this in itself will not realise the full potential of the area and that in order to deliver the most sustainable and balanced growth across the area as a whole, site specific interventions will be required, particularly in the east but to also promote sustainable modes of transport in the west. It is important to note that site specific interventions have not been reflected within the overall high, medium and low deliverability assessment.

¹ It is important to note that in relation to 'gaps' and 'missing' sites/locations, these have been identified through a map-based exercise and therefore are parcels of land not submitted to the Council through the Call for Sites process. It is likely that landowners are unaware of this which may have implications for delivery and availability if a 'gap' or 'missing' location is considered appropriate of further consideration for growth.

- 2.9 The study identifies a number of high level transport opportunities that could improve the sustainable transport credentials and relative performance of individual locations. In relation to the Marston/Aspley Guise/Cranfield area on the western side of the study area, this includes better cycle connectivity as well as improved bus connectivity and service quality. Integration with new interchange hubs, such as Ridgemont Interchange would be critical in terms of supporting inter-regional trips.
- 2.10 In relation to the A1 corridor Sandy/Biggleswade/Arlesey area on the eastern side of the study area, the study identifies the potential for a new public transport interchange north of Sandy and car parking enhancements in order to facilitate Park and Ride, alongside improved bus connectivity and the promotion of cycle network connections. The full range of measures identified through the study is detailed on pages 73-77 of the report.
- 2.11 The performance of each location has been expressed as high, medium or low across the range of criteria and provides the Council with a guide as to where strategic level growth may be located across Central Bedfordshire.
- 2.12 **It is important to note that the identification in this high level study of a location as high or medium performance does not mean that they will ultimately be taken forward within the local plan**, and similarly, a location that has been assessed as low does not preclude any development coming forward at all.
- 2.13 The study sought to consider the locations across five Spatial Themes. These five themes were included so as to generate alternative spatial distributions of development in a transparent and consistent way. The five spatial themes are:
- 1) New Settlements – stand alone developments that are clearly separated from existing built areas;
 - 2) Village Extension – locations on the edge of smaller settlements within the study area;
 - 3) Growth in Transport Corridors – locations that have good access to the strategic transport network, including road and rail;
 - 4) Urban Extensions – locations on the edge of the larger, urban settlements within the study area; and
 - 5) Urban Intensification – locations within or adjacent to existing urban areas with good access to public transportation hubs.
- 2.14 The Key findings of the study are:
- The study shows that growth within the north of Central Bedfordshire is heavily reliant upon improved transport infrastructure. Whilst the northern part of Central Bedfordshire has a strong supply of land that has the potential to deliver growth, there is limited east/west connectivity and sustainable transport in the north, which can only be overcome through clear policy direction and significant infrastructure investment including the proposals for the central section of East West Rail, a new Expressway and improvements to the A1 Corridor. These however, will not unlock the full potential of the area and further local interventions would be required.
 - As outlined within the report at section 2.6 to 2.8 above, in addition to the proposed transport infrastructure, there are a number of potential large strategic sites across the area that would require significant developer contributions in order to be delivered and to be considered sustainable i.e. a dedicated bus link to an existing rail station or in the case of the largest developments, new, large scale infrastructure such as new rail stations or highway/junction improvements.

- Transport investment will be required in order to develop a more balanced spatial strategy and to unlock and release land to accommodate growth. Such investment and infrastructure takes time to deliver and resulting growth from the larger more complex locations, may therefore not be possible until the second half of the plan period.

3. Implications for the Local Plan

- 3.1 The Growth Options study should not be considered or viewed as a stand alone document as the findings will need to be considered alongside a number of other evidence base studies being undertaken by Central Bedfordshire Council in order to inform the most appropriate options for delivering sustainable growth across Central Bedfordshire. Other technical evidence that will help inform the locations taken forward as options, and ultimately as allocations, within the local plan include settlement capacity study, transportation modelling, detailed site assessment work and the sustainability appraisal.

Appendix A

Central Bedfordshire Council North Growth Options Study

New Local Plan

Final Report

November 2016



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North Central Bedfordshire Growth Options Study

Final Report

Prepared by LUC in association with BBP Regeneration & Integrated Transport Planning Ltd

February 2017

Project Title: North Central Bedfordshire Growth Options Study

Client: Central Bedfordshire Council

Version	Date	Version Details	Prepared by	Checked by	Approved by
1.1	12.12.16	Draft report for client review and comment	N Hilton; R Schofield; E Lendak; S Pritchard; R Thakrar; E Kosseva; J Wheway; J Sanclemente	N Hilton	
1.2	23.12.16	Second draft for client review	N Hilton; R Schofield; E Lendak; S Pritchard; R Thakrar; E Kosseva; J Wheway; J Sanclemente	N Collins	
1.3	31.01.17	Final for comment	N Hilton; R Schofield; E Lendak; S Pritchard; R Thakrar; E Kosseva; J Wheway; J Sanclemente	N Hilton	
1.4	21.02.17	Final	N Hilton; R Schofield; E Lendak; S Pritchard; R Thakrar; E Kosseva; J Wheway; J Sanclemente	N Hilton	N Hilton



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North Central Bedfordshire Growth Options Study

Final Report

Prepared by LUC in association with BBP Regeneration & Integrated Transport Planning Ltd

February 2017

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Executive Summary

The Growth Options Study was commissioned by Central Bedfordshire Council (CBC). The aim of the Study is to identify and assess realistic options to help meet housing need within Central Bedfordshire. The study area covers the North of Central Bedfordshire, excluding areas from within the authority boundary which also fall within the Luton Housing Market Area (HMA), as potential growth options within the HMA are studied within another report.

The study focuses on a relatively small number (30) of potential sites for strategic scale housing, referred to as 'locations'. As a starting point, the locations were identified through CBC's call for sites and Strategic Housing Land Availability Assessment (SHLAA) process and then grouped together. Some 'missing' sites were added as a way of creating logical boundaries according to a defined set of rules. Others were not considered due to presence of primary environmental constraints.

Each location was allocated to one, or more, of five spatial options:

- New settlements: based on achieving clear separation from Central Bedfordshire's largest existing settlements and on achieving a sufficient size to support provision of a broad range of services and facilities.
- Village extensions: based on identifying locations that are on the edge of CBC's smaller settlements.
- Growth in transport corridors: based on identifying locations that have good access to the strategic transport network.
- Urban extensions: based on identifying locations that are on the edge of CBC's larger settlements.
- Urban intensification around public transport hubs: based on identifying locations that have good access to public transport hubs.

The locations were assessed taking into account the following factors; the results summarised in **Table 1** below:































- 1 **Deliverability** – The assessment of deliverability is based on a number of non-financial factors that may help or limit the site being brought forward. These include land availability (willing owner), proximity to basic services such as shops, schools and doctors' surgeries, required new strategic infrastructure being delivered in the vicinity of the site, and expected demand for housing. Deliverability is assessed based on the prospect of the entirety of the location being delivered, at the assumed size, type of development (i.e. village/urban extension) and dwelling capacity.
- 2 **Viability** - The viability assessment looks primarily at the financial viability of the site based on the likely cost of bringing the site forward, the number of dwellings that could be delivered on the site and the likely sale value of those dwellings. It considers each location with and without policy compliant affordable housing provision and takes account of contributions towards local infrastructure as well as 'abnormal' factors such as land remediation. An assumed density and development mix is applied based on the type of development and existing land use.
- 3 **Environmental constraints** - were categorised as either 'primary' or 'secondary' constraints. 'Primary' constraints are those constraints where significant development is likely to be precluded, for example within an AONB or an area with high flood risk. 'Secondary' constraints are those that are sensitive but have less weight applied to them in national policy, such as an Air Quality Management Area or a lower risk flood zone (i.e. Flood Zone 2). The types of constraints were mapped in relation to the study area. Areas of primary constraint are considered undevelopable. The number of secondary constraints which affect a potential growth location has been tabulated and mapped to form part of the assessment.

- 4 **Accessibility (transport)** - examines how sustainable the site is likely to be from a transport perspective. The assessment acknowledges that the primary driver of journeys from residential sites is employment based trips. Seven transport-related metrics are considered within the assessment; how people currently travel to work; the accessibility of the site by public transport and road (number of jobs within 60 and 30 minutes respectively); and existing car parking capacity at the four mainline train stations within the study area. Current congestion levels and accidents / road safety in the vicinity of the site are also considered. These factors are considered in the context of existing and future transport infrastructure.

Assumed densities were applied to each location based on a set of agreed assumptions that took account of the characteristics of the site (for example whether a site was urban or rural in character) and from which a total net housing capacity could be calculated. This is presented up to 2035 and demonstrates more than enough developable land exists across the Northern part of Central Bedfordshire to accommodate the required level of housing, taking into account housing delivery from sites that are already committed and from smaller sites falling outside the study scope. It is understood that some 16,000 additional homes will be required as a minimum across the whole of the CBC area, including the Luton HMA, and the North Study Area alone has sufficient capacity to provide up to approximately 40,000 homes during the plan period. This of course does not take into account all constraints or the relative performance of the locations; however, the study does provide supporting evidence for CBC to consider a range of spatial options that will allow the delivery of balanced growth across the area.

The assessment is based on a range of assumptions consistent with existing evidence. The performance of each location has been expressed as low to high across the range of criteria. It is important to note that the identification of a location as high does not indicate that it will ultimately be brought forward within the CBC Local Plan, and similarly, the identification of a location as low does not necessarily indicate that the location will not be suitable for any growth at all. This should be considered as a guide with the assessment framework allowing users to identify strengths and limitations of a location whilst all the time acknowledging the potential to improve a location's performance. For example by improving public transport accessibility or adjusting housing densities to take account of policy and market conditions. It should also be noted that all assessments are based on a snapshot in time and changing conditions or priorities may render a site more or less attractive.

Table 1: Assessment findings for all locations

ID	Location name	Site area (ha)	Assumed density (dph)	Assumed total net capacity	Estimated net capacity to 2035	Overall deliverability (high / medium / low)	Overall viability (high / medium / low)	Overall accessibility (Future scenario - public transport led weighting)	No. of secondary constraints present (0-16)	Public transport hub within 1.2 km? (rail stn, guided busway stop, park & ride)	% of location with 'relatively strong' or higher overall contribution to Green Belt
N1	Salford	662.4	44	17487	2500	Low	High	Medium	 7	No	0%
N2	Wharley End West	75.4	30	1357	1357	High	Medium	High	 3	No	0%
N3	Cranfield West	47.5	30	855	855	Medium	Medium	High	 3	No	0%
N4	Cranfield East	26.4	30	475	475	High	Medium	High	 2	No	0%
N5	M1 J13	241.0	55	7953	2500	High	High	Medium	 6	Yes	0%
N6	Marston Moretaine South-Lidlington-Brogborough	515.2	55	17002	2500	High	Low	Medium	 9	Yes	0%
N7	Lidlington South	322.5	55	10643	2500	High	Low	High	 6	Yes	0%
N8	Marston Moretaine North	269.6	44	7117	2500	Low	Medium	High	 6	No	0%
N9	Wixams-Stewartby-Houghton Conquest	192.9	55	6366	2000	Medium	Medium	High	 7	Yes	0%
N10	Sandy North East	184.4	44	4868	2000	Low	High	Medium	 6	No	0%
N11	Sandy North West	256.0	44	6758	2500	Medium	High	Medium	 5	No	0%
N12	Blunham South	26.9	30	484	484	Medium	High	Medium	 5	No	0%
N13	Sandy East	32.8	55	1082	1082	Medium	Medium	High	 4	Yes	0%
N14	Potton West	93.2	30	1678	900	Low	High	Medium	 5	No	0%
N15	Potton South	17.5	30	315	315	Medium	High	Medium	 5	No	0%
N16	Biggleswade North	51.1	55	1686	1200	Medium	Low	Medium	 6	Yes	0%
N17	Sutton-Biggleswade	324.0	44	8554	2000	Low	High	Medium	 7	No	0%
N18	Broom	25.3	30	455	455	Medium	High	Medium	 3	No	0%
N19	Biggleswade South	97.1	55	3204	2000	Medium	High	Medium	 7	Yes	0%
N20	South of Biggleswade	35.9	30	646	646	Medium	High	Medium	 3	No	0%
N21	Shefford West	51.8	30	932	932	Medium	High	Medium	 4	No	0%
N22	Shefford South-Clifton	60.9	30	1096	1096	Medium	High	Medium	 6	No	0%
N23	Meppershall	30.3	30	545	545	Medium	High	Medium	 4	No	0%
N24	Henlow-Clifton	35.4	30	637	637	Medium	High	Medium	 7	No	0%
N25	Henlow Airfield	217.6	44	5745	2000	Low	High	Medium	 5	No	0%
N26	Henlow Camp-Lower Stondon	36.1	30	650	650	Medium	High	Medium	 4	No	0%
N27	North of Church End	158.2	55	5221	2000	Medium	Medium	Medium	 8	Yes	0%
N28	Stotfold West	109.0	30	1962	1200	Medium	High	Medium	 7	No	0%
N29	Arlesey-Fairfield Park	292.8	44	7730	2000	Low	High	Medium	 5	No	0%
N30	Stotfold East	33.1	30	596	596	Medium	High	Low	 4	No	0%
TOTAL				124099	42425						

1 Introduction

- 1.1 Following the commissioning of a Growth Options Study for the Luton Housing Market Area (HMA), the North Central Bedfordshire Growth Options Study was commissioned by Central Bedfordshire Council (CBC). CBC had identified the need to develop a similar evidence base for their own plan making process in order to ensure that the areas within their administration not covered by functional housing market areas were considered as potential locations for housing and economic growth. The North Growth Options Study has been designed so that it can be read and used in conjunction with the Luton HMA Growth Options Study, so that together they can form a robust evidence base to be used by CBC in the formulation of their Local Plan and the spatial strategies within it.

Aim

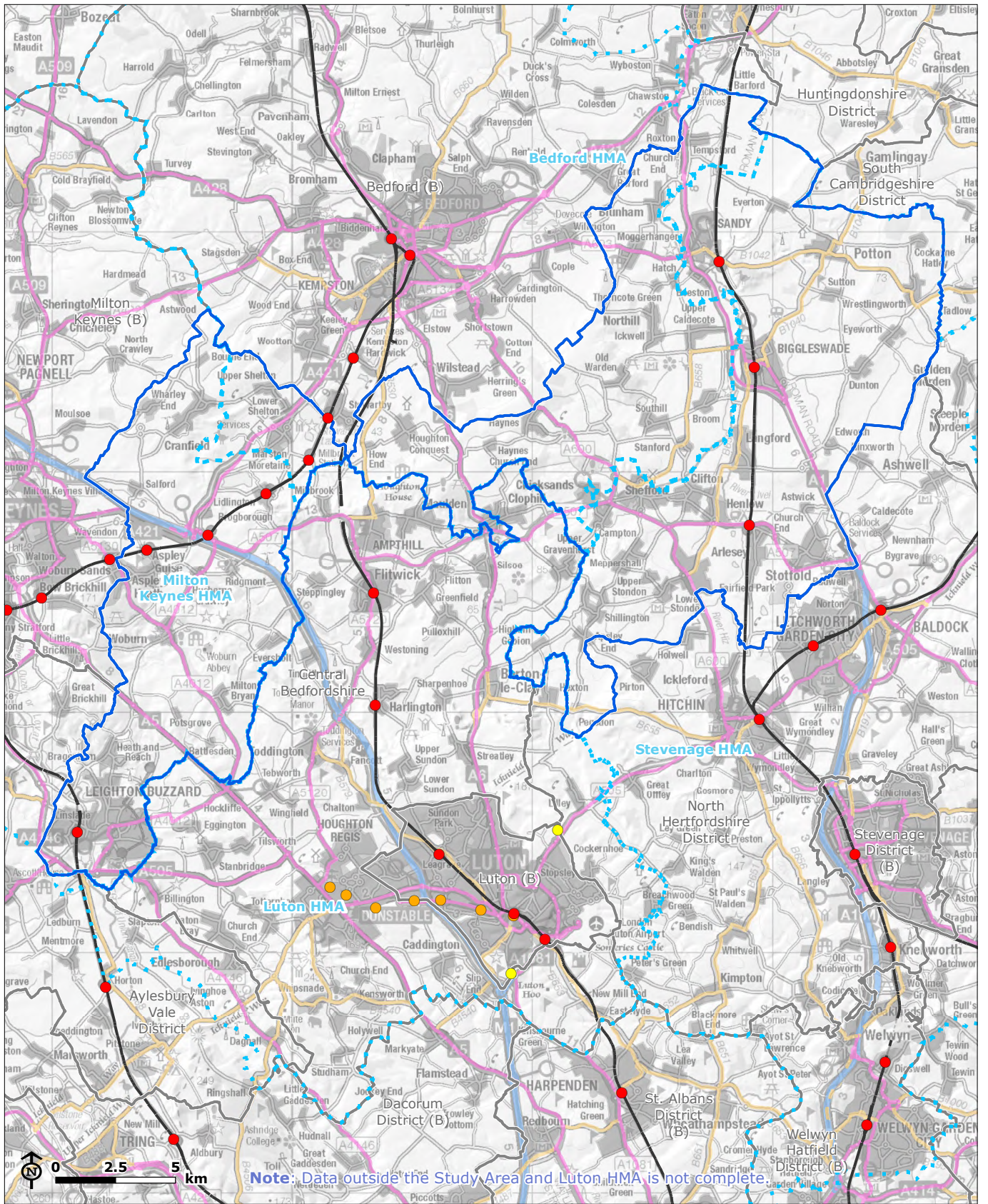
- 1.2 The aim of the Growth Options Study was to identify and assess realistic options to help meet housing need (both market and affordable and associated essential infrastructure) within north Central Bedfordshire during 2015-2035. The study provides an assessment of the capacity for all types of housing (market and affordable). Although the viability of delivering affordable housing in each location has been considered as part of the viability assessment, the high level nature of the study does not allow conclusions to be drawn on the split between market and affordable housing delivery.
- 1.3 The study will provide evidence to be used alongside other studies, including other Growth Options Studies (notably the Luton HMA study), Central Bedfordshire and Luton Green Belt Study, transport modelling, and Strategic Housing Land Availability Assessment (SHLAA), to support CBC's selection of spatial options and their assembly into a spatial strategy to meet the total housing requirement within Central Bedfordshire through the preparation of their Local Plan.
- 1.4 The potential locations for housing development identified by the Growth Options Study were based only on the criteria and methodology for this study which, subject to a number of other considerations, could potentially deliver sustainable growth. The study grouped together individual sites that had come forward through the call for sites process but did not examine detailed masterplanning issues associated with sites or groups of sites. The assessment of individual potential growth locations is high level and as such further more specific studies and modelling may be required in order to re-examine the locations in respect of infrastructure requirements and other such detail.
- 1.5 Further work is being undertaken through CBC's SHLAA process as a requirement of their Plan making process, including the examination of smaller sites that were not considered as part of this study. This further assessment allows the locations and sites within them to be considered in greater detail and for site specific issues, locational factors and relationships to existing settlements or features to be given their due consideration. CBC will also have to consider the suitability of sites for inclusion in the Local Plan on the basis of their sustainability appraisal and spatial strategy.

Background

- 1.6 The study area for the North Central Bedfordshire Growth Options Study, depicted in Figure 1.1, comprises Central Bedfordshire excluding the southern part of the administrative area, which falls within the Luton Housing Market Area (HMA). The area of Central Bedfordshire which forms part of the Luton HMA is included in another growth options study, the Luton HMA Growth Options Study, and has therefore been excluded from the area covered by this study. Notwithstanding

this, it is noted that the study area still sits within three other Housing Market Areas; Milton Keynes, Bedford and Stevenage.

- 1.7 This study has been designed to ensure consistency of approach with the Luton HMA Growth Options Study so that the findings of the two studies can be read together to provide an effective evidence base for CBC, alongside other studies, in the formulation of their Local Plan.
- 1.8 One area where the methodologies have differed is the level of transport analysis carried out. Both studies examine accessibility to key services in the same way; however, due to the different characteristics of the North study area some additional transport analysis has been carried out. This is explained in greater detail below but in broad terms takes a more detailed look at access to employment by private car and public transport modes, making an allowance for future infrastructure provision which, in the case of the north study area, has the potential to significantly affect the performance of potential housing locations.
- 1.9 CBC currently estimates a need to find sites for around 20,000 new homes within Central Bedfordshire (i.e. not just the study area) over the plan period 2015 to 2035. As they develop the Local Plan for Central Bedfordshire it is expected that this figure will be refined. The Local Plan will be informed by a range of information and a large number of studies, of which this study is one, to form an evidence base on topics such as infrastructure, economic development, the need for new homes and environmental issues. The studies which form the evidence base are to be published alongside the draft Local Plan.



NORTH CENTRAL BEDFORDSHIRE
Growth Options Study

Figure 1.1: Study Area Overview

LUC

- Study Area
- Housing Market Area
- Local Authority boundary
- Motorway
- A Road
- B Road
- Railway station
- Guided busway stop
- Park & Ride
- Railway
- Built-up area

Source: Central Bedfordshire

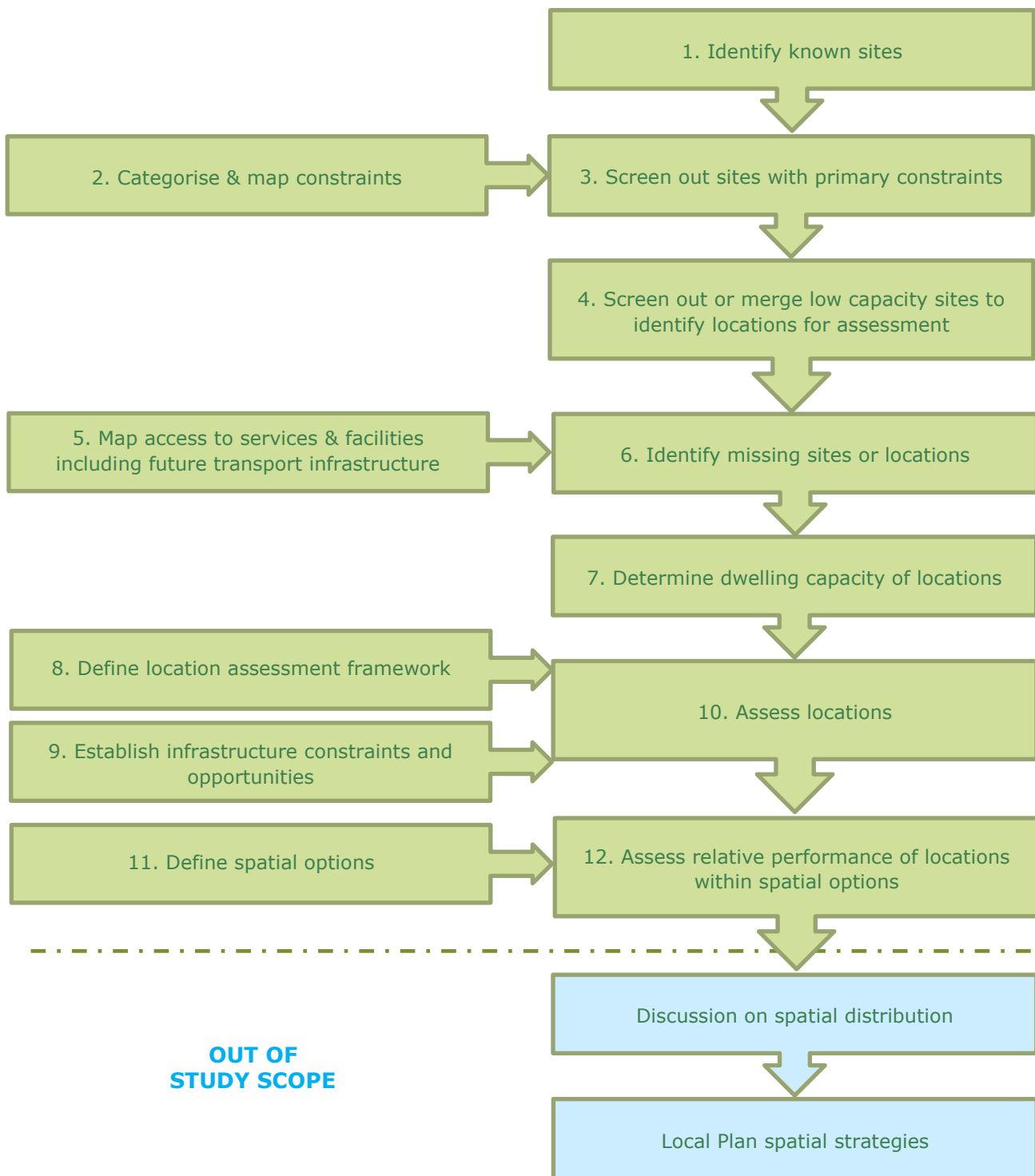
Map Scale @ A4: 1:225,000

2 Method

Overview

- 2.1 This study considers the suitability of land in central Bedfordshire for the development of housing. It examines a range of characteristics in order that the opportunities, constraints and requirements of each location can be better understood prior to inclusion in the spatial strategy. Specific recommendations relating to the spatial strategy are not considered here however it is expected that the findings of this study will form part of the evidence base for the local plan.
- 2.2 To reflect the strategic remit of the North Central Bedfordshire Growth Options Study and to ensure that it could be achieved within the defined time and budget constraints, the study focused on a relatively small number (30) of groupings of known or potential sites for strategic scale housing, referred to as 'locations'.
- 2.3 The list of locations for assessment was created in discussion with CBC officers. It took known sites (identified through the council's call for sites and Strategic Housing Land Availability Assessment – SHLAA - process) as a starting point, gave consideration to additional 'missing' sites, and focused on those which are free of the types of constraint most likely to preclude development ('primary constraints') and which have relatively good access to existing services and facilities, whilst allowing for the possibility of providing a range of new services and facilities in the largest new developments.
- 2.4 Each location was assessed in terms of its:
 - constraints;
 - access to services and facilities;
 - Green Belt performance;
 - deliverability;
 - viability; and
 - transport accessibility.
- 2.5 A small number of thematic spatial options for growth were also agreed with CBC, for example growth in transport corridors or growth as a new settlement. Each location was allocated to the relevant spatial options, according to its size and location, and a high level assessment made of the relative performance of the locations falling within each spatial option.
- 2.6 An overview of the study methodology is provided in Figure 2.1; the text below provides a description of each of the Growth Options Study steps shown. The process by which the findings of the study are then likely to be taken forward by CBC is outlined in the Next Steps section of Chapter 4.

Figure 2.1 Main components of Growth Options Study method



Detailed methodological steps

Step 1. Identify known sites

- 2.8 GIS data was obtained from CBC showing potential or proposed sites for housing and associated essential infrastructure. These were based on information CBC had gathered through their 'call for sites' and SHLAA process, plus any other potential development sites known to them. Sites in this 'long list' could be of any size; the subsequent shortlisting process to identify locations for assessment is described in the following methodological steps.
- 2.9 Sites which had already been allocated in a plan which has been examined (including allocations in examined neighbourhood plans) or which had received planning permission did not count towards the growth capacity identified by the study but formed part of the baseline. These were referred to as 'committed' sites and CBC indicated in the GIS data supplied to LUC any sites which they considered to be committed.

Step 2. Categorise and map constraints

- 2.10 Potential constraints to development were mapped under the following themes:
- Historic environment
 - Biodiversity
 - Landscape
 - Air quality
 - Soil quality
 - Flood risk
 - Energy supply infrastructure
 - Mineral resources
 - Open space, sport and recreation areas
 - Water quality and water bodies / waterways
- 2.11 The constraints were categorised as either 'primary' constraints or 'secondary' constraints, according to the environmental sensitivity of the asset in question and the strength of the policy safeguards that apply to them:
- 'Primary' constraints were those constraints where significant development is likely to be precluded, for example within an Area of Outstanding Natural Beauty (AONB) or within an area at high risk of flooding.
 - 'Secondary' constraints were those that are sensitive but have less weight applied to them in national policy, i.e. where significant development may not be precluded, but where there is the risk of negative impacts which could be significant, for example at the sub-national level.
- 2.12 The types of constraint that were mapped and their categorisation as primary or secondary are shown in Appendix 1.

Step 3. Screen out areas subject to primary constraints

- 2.13 Primary constraints represent the most sensitive environmental assets and / or areas subject to the strongest policy safeguards. To support the identification of 'locations' for detailed assessment, sites entirely within an area subject to primary constraint(s) were excluded from further consideration. If a site was partially within an area of primary constraint, only the unconstrained portion was carried forward for consideration as part of a potential development location.

Step 4. Screen out or merge low capacity sites to identify locations for assessment

- 2.14 To further support the identification of suitably sized locations for detailed assessment, additional locations were created by iteratively merging smaller sites in close proximity to one another. Any remaining isolated, smaller sites were not considered further.
- 2.15 The process of identifying locations for assessment began with the following iterative process:
- merge any overlapping or directly adjacent sites (regard sites separated by up to 10 m as directly adjacent);
 - disregard any remaining sites smaller than 5 ha;
 - merge any remaining sites smaller than 25 ha with any other site whose boundary lies within 100 m, continuing iteratively until a new location with an area of at least 25 ha is created;
 - if the process above plus the identification of 'missing' locations (see Step 6 below) yields fewer than 30 locations, also carry forward a selection of the remaining, isolated sites smaller than 25 ha for assessment (in this study, Location N15 is the only location less than 25ha in size; it's inclusion results in a total of 30 locations).
- 2.16 The locations created by this process were then sense-checked in discussion with CBC. At this point, consideration was also given to whether any further 'missing' sites or locations should be assessed (see Step 6 below).
- 2.17 Although a number of small sites identified in the call for sites data are excluded from the assessment as a result of the above method, these will nevertheless be considered by CBC in due course, through their SHLAA and development management process. When the results of the Growth Options Study are used to inform CBC's spatial strategy it will be important for the strategy to account for the amount of housing expected to be provided on smaller sites that fell outside the scope of the study, whether these are to be allocated in the Local Plan or left to come forwards as 'windfall' sites.

Step 5. Map access to existing services and facilities, including future transport infrastructure

- 2.18 To help inform the sense-checking of locations for assessment and to provide an assessment of the accessibility of chosen locations, a selection of existing services and facilities serving the study area was mapped, as far as available data allowed. This included collecting data for and mapping existing services and facilities of the neighbouring local authorities as these may be relevant to potential locations within the study area depending on their proximity. To increase the usefulness of this information straight-line walking distance zones around these services and facilities were also mapped; these were indicative and not intended to represent cut-offs beyond which residents would not travel to the service / facility in question. Walking zones were defined using professional judgement but with reference to 'desirable', 'acceptable', and 'preferred maximum' walking distance standards to various categories of destination established by the Institution of Highways and Transportation¹. The standards assume that an 800 metre walk will take the average person around 10 minutes.
- 2.19 As well as existing services and facilities, the mapping also took account of new services and facilities that might be expected to be provided on committed² housing development sites. It was

¹ Guidelines For Providing For Journeys On Foot, The Institution of Highways and Transportation, 2000.

² Those with planning permission or allocated in a Local Plan document which has been subject to examination

assumed that committed sites of 100 hectares or more will, as a minimum, provide a bus stop, a primary school, a local / neighbourhood centre, and an area of publicly accessible open space; this was judged to be a relatively conservative position. It was assumed that whilst housing sites within urban areas may achieve a similar scale of housing provision on smaller sites as they typically support higher densities, sites of less than 100 ha in urban areas would not provide the services and facilities listed above due to the proximity of such sites to existing infrastructure as well the reduced ability of smaller sites to accommodate on-site services and facilities. Similarly, when mapping access to existing employment areas, committed major employment sites were also included.

- 2.20 Existing services and facilities that were mapped and the corresponding walking zones are shown in **Table 2.1**.

Table 2.1: Access to existing services and facilities

Service / facility	Indicative walking distance	Data gaps and limitations
Railway stations and park and ride facilities	1.2 km	<i>Based on Ordnance Survey OpenMap-Local dataset. No park & ride facilities of significance for the assessment have been identified.</i>
Major employment areas	2.0 km	<i>Compiled by LUC based on employment data received from Local Authority's and from discussions with stakeholders. No major employment areas of significance for the assessment have been identified in MKC, BED, HUN and SCC.</i>
Town centres and major out of centre retail parks	0.8 km	<i>No town centres of significance for the assessment have been identified within the Study Area.</i>
Publicly accessible open spaces	1.2 km	<i>Compiled by LUC including data received from CBC, NHDC and SCC; data downloaded from data.gov.uk or manually digitized based on online maps and documents available on the neighbouring Local Authority's websites.</i>
Secondary or upper schools and further or higher education establishments	2.0 km	<i>Data received from CBC (appears to cover relevant part of NHDC). In the absence of data from neighbouring Local Authorities, the Ordnance Survey OpenMap-Local dataset was used.</i>
Lower, middle or primary schools	1.0 km	<i>Data received from CBC (appears to cover relevant part of NHDC). In the absence of data from neighbouring Local Authorities, the Ordnance Survey OpenMap-Local dataset was used.</i>
Local / neighbourhood centres	0.4 km	<i>No local centres of significance for the assessment have been identified within the Study Area.</i>
NHS primary healthcare (GPs) and hospitals	1.2 km	<i>Data received from CBC and SCC. In the absence of data from other neighbouring Local Authorities, hospitals were manually digitised and approximate GP surgery locations were based on postcode centre points downloaded from the Health and Social Care Information Centre.</i>
Bus stops	0.8 km	<i>Based on bus stops data obtained from the National Public Transport Access Nodes (NaPTAN) website.</i>

- 2.21 Further to the mapping exercise set out above; ITP, in conjunction with LUC and BBP, produced a transport infrastructure investment schedule (Appendix 3) for all major infrastructure to identify 'existing' and 'planned' future transport infrastructure.
- 2.22 The purpose of this schedule was to detail key characteristics of major transport proposals, including a description of each proposal, cost (when available), status of the proposal and the

likelihood of delivery by 2035. This schedule enabled ITP to outline preliminary implications for future accessibility and it was supplemented by a transport infrastructure location plan.

- 2.23 The differentiation between 'existing' and 'planned' major transport infrastructure, enabled ITP to set out both an infrastructure baseline (i.e. existing conditions) and assumed future conditions. A series of maps were used to draw attention to public transport and road accessibility findings throughout the study area. These maps provided key transport inputs for the definition of potential growth options and were used as part of the assessment.
- 2.24 The tasks, largely in relation to 'planned' major transport infrastructure, were developed by:
- reviewing current and emerging transport strategies, infrastructure development plans and other relevant strategies / programmes;
 - consulting with the transport team of Central Bedfordshire Council early in the schedule preparation process;
 - judging the delivery likelihood by reference to transport investment programmes and the outcome of conversations with key stakeholders / scheme promoters; and
 - considering likely implications to accessibility, based on professional judgement and the likely significance of impacts.
- 2.25 Key stakeholders consulted included representatives of:
- Central Bedfordshire Council transport team;
 - Luton Borough Council Transport team
 - East West Rail Consortium;
 - Network Rail;
 - Others (e.g. consultants working on behalf of Highways England).
- 2.26 In relation to the 'existing' transport infrastructure, at first, the assessment of growth options employed a proximity approach to existing highways and sustainable transport. This allowed the project team to develop a strategic appraisal methodology comparable with the Luton HMA Study. Notwithstanding the use of the proximity approach, a more detailed accessibility analysis was completed to highlight access to employment as well as potential opportunities to support sustainable travel patterns and influence public transport patronage through housing delivery.

Assumed future conditions

- 2.27 The following transport infrastructure schemes were included within the assumed future conditions:
- East West Rail Scheme (Western and Central Sections)
 - Interchange at Ridgmont
 - Bedford Western Bypass
 - Oxford to Cambridge Expressway
 - Biggleswade Eastern Relief
 - A5-M1 Link (Dunstable Northern Bypass)
 - M1-A6 Link
 - Leighton Eastern Link Road
 - A1(M) East of England Improvements
- 2.28 The schedule in Appendix 3 can be referred to for further detail on each of the above schemes.

Step 6. Identify missing sites or locations

- 2.29 The spatial information described above in relation to constraints, access to existing services and facilities, and known / proposed housing sites was compiled into an interactive mapping project using our in-house GIS system. This spatial information was then reviewed by the consultant

team to help identify any obvious 'missing' sites or locations, in addition to those based on call for sites information or otherwise already known to CBC. This was a purely technical exercise and no landowner searches or consultation were carried out in identifying missing sites or locations.

2.30 A number of location boundaries were modified to take account of these 'missing' sites, by reference to the following broad principles:

- where a location created from sites identified via the call for sites process was not bounded by any obvious boundary features (e.g. settlement boundary, major road, railway line) the location was extended up to any available nearby boundary feature except where this would only result in a negligible change in the extent of the location;
- where a location created from sites identified via the call for sites process was in close proximity to a site smaller than 25 hectares which would otherwise have been discounted from consideration as a potential growth location, a missing site was added to amalgamate the two, provided that there were no apparent development constraints (for example, sensitive landscape, known proposal for an employment site, presence of a quarry) within the area to be added to the location;
- where existing or planned transport infrastructure created an opportunity for development in a location well served by transport networks but no sites had come forward through the call for sites, an entire 'missing' location with an indicative boundary would be added (rather than adding a missing site to a location already created by amalgamating sites from the call for sites process);
- where locations comprised entirely of sites identified via the call for sites process could result in settlement coalescence, this issue was noted but did not result in any change to the proposed location boundary; in contrast, when considering the addition of 'missing sites', these were only added if they would not contribute to coalescence with an existing settlement boundary (as modified by any committed sites but ignoring other potential locations for development).

2.31 The changes made to the initially identified locations as a result of this review for missing sites or locations are summarised in **Table 2.2**. All missing sites represent a small percentage of the total site area and were included in order to ensure logical boundaries with existing features such as roads.

Table 2.2: Consideration of missing sites or locations

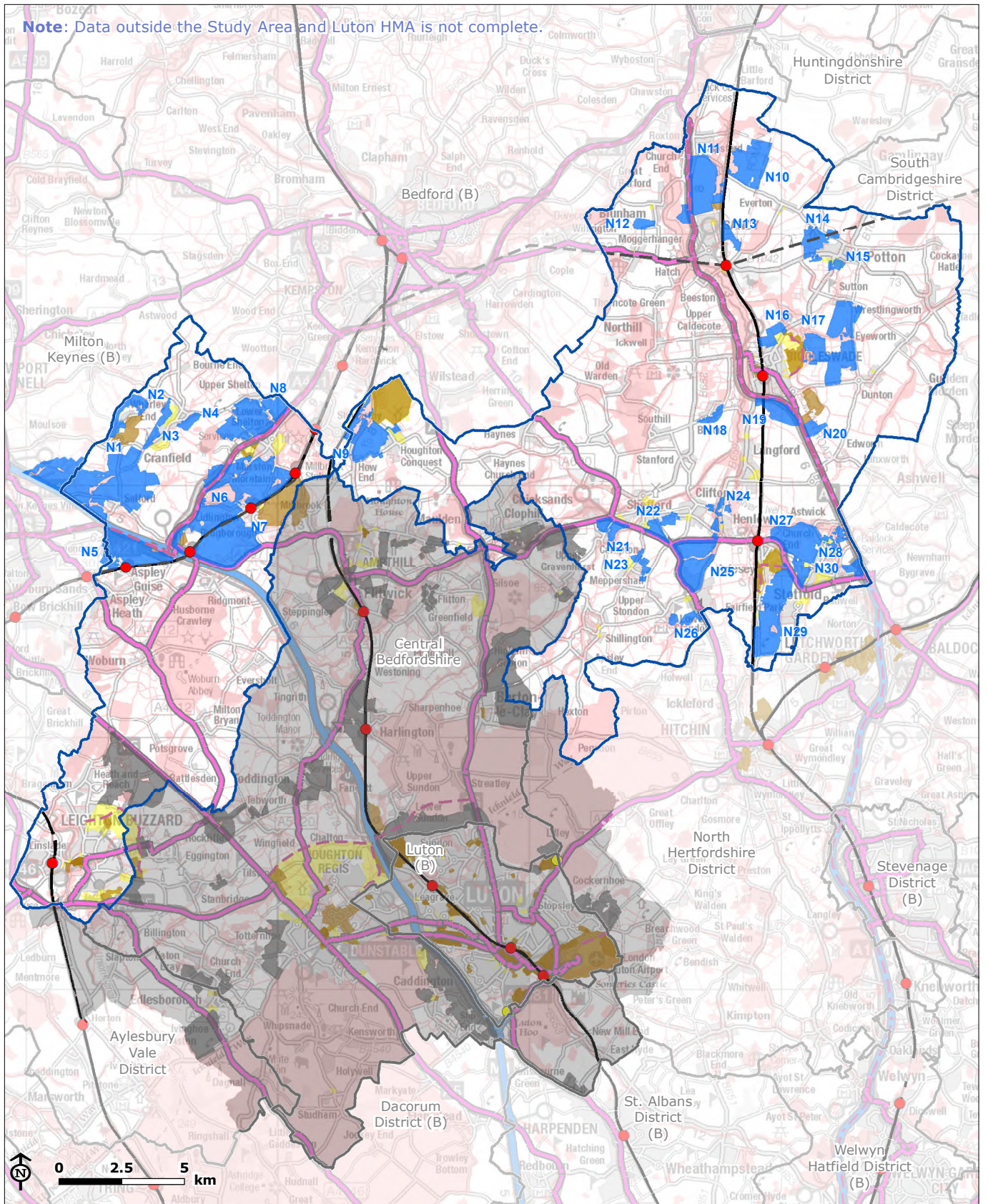
ID	Location name	Component site reference nos. from Councils' call for sites processes	Result of review for missing sites or locations
N1	Salford	NLP383; NLP190; NLP212; NLP293; ALP288	No extension required beyond call for sites boundaries
N2	Wharley End West	NLP176; NLP260; NLP173; NLP293; ALP188	Missing sites added
N3	Cranfield West	NLP394; NLP486; NLP198; NLP293; ALP353; ALP386; ALP238; ALP290	No extension required beyond call for sites boundaries
N4	Cranfield East	NLP104; NLP315; ALP015; ALP109	No extension required beyond call for sites boundaries
N5	M1 J13	NLP463; NLP034	No extension required beyond call for sites boundaries
N6	Marston Moretaine South-Lidlington-Brogborough	NLP323; NLP370; NLP370; NLP199; NLP269; NLP372; NLP014; ALP383; ALP421; ALP087	Missing sites added
N7	Lidlington South	NLP177; NLP244; NLP256; ALP200	Missing sites added
N8	Marston	NLP054; NLP028; NLP029; NLP030; NLP312; ALP011;	Missing sites added

ID	Location name	Component site reference nos. from Councils' call for sites processes	Result of review for missing sites or locations
	Moretaine North	ALP114; ALP315	
N9	Wixams-Stewartby-Houghton Conquest	NLP070; NLP071; NLP191; NLP156; NLP304; ALP005; ALP196; ALP283; ALP314; ALP350; ALP352; ALP224; ALP065	No extension required beyond call for sites boundaries
N10	Sandy North East	NLP450	No extension required beyond call for sites boundaries
N11	Sandy North West	NLP461; NLP452; NLP208; NLP209; NLP414; NLP264; NLP249; NLP084; ALP294; ALP319; ALP320; ALP375	No extension required beyond call for sites boundaries
N12	Blunham South	ALP120; ALP461; ALP119	No extension required beyond call for sites boundaries
N13	Sandy East	NLP248; ALP133	No extension required beyond call for sites boundaries
N14	Potton West	NLP398; NLP098; NLP330; NLP042; NLP347; NLP290; NLP130; NLP170; NLP186; NLP006; ALP017; ALP220; ALP453; ALP458; ALP045; ALP095; ALP217	Missing sites added
N15	Potton South	NLP112; ALP223; ALP024; ALP096	Additional site, includes missing sites. Acknowledged anomaly: Noted that northern section of missing site is also a banked housing site; decision to retain as part of location in this instance given 'natural fit' with the south of Potton in terms of potential growth. This should be noted if / when dwelling capacity figures beyond existing banked developments are being calculated. The scale of the location is such that the results would not be significantly altered were the banked portion of the site to be removed from the location.
N16	Biggleswade North	NLP415; NLP258; ALP182; ALP221; ALP194	No extension required beyond call for sites boundaries
N17	Sutton-Biggleswade	NLP325; NLP433	No extension required beyond call for sites boundaries
N18	Broom	NLP359; NLP357; NLP358; NLP086	No extension required beyond call for sites boundaries
N19	Biggleswade South	NLP401; NLP437; NLP213; ALP442	Missing sites added
N20	South of Biggleswade	NLP067	No extension required beyond call for sites boundaries
N21	Shefford West	NLP083; NLP082; ALP287; ALP390	Missing sites added
N22	Shefford South-Clifton	NLP140; NLP141; NLP145; NLP146; NLP137; NLP373; NLP135; NLP009; ALP472; ALP190; ALP273; ALP274	Missing sites added
N23	Meppershall	NLP236; NLP237; NLP095; NLP096; NLP235; NLP050; NLP283; ALP373; ALP473; ALP210; ALP211	No extension required beyond call for sites boundaries
N24	Henlow-Clifton	NLP337; NLP219; NLP221; NLP222; NLP234; NLP097; NLP288; NLP201; NLP076; ALP179; ALP041; ALP073;	No extension required beyond call for sites boundaries

ID	Location name	Component site reference nos. from Councils' call for sites processes	Result of review for missing sites or locations
		ALP232; ALP471; ALP001	
N25	Henlow Airfield	NLP007	Additional site added
N26	Henlow Camp-Lower Stondon	NLP295; NLP291; NLP179	No extension required beyond call for sites boundaries
N27	North of Church End	NLP119	Additional site added
N28	Stotfold West	NLP100; NLP106; NLP063; NLP068; NLP329; NLP468; NLP391; NLP115; NLP119; NLP154; NLP160; NLP163; NLP078; ALP049; ALP208; ALP282; ALP413; ALP395	Missing sites added
N29	Arlesey-Fairfield Park	NLP251; NLP451; NLP419; NLP419; ALP279; ALP441; ALP439	No extension required beyond call for sites boundaries
N30	Stotfold East	NLP427; ALP171	No extension required beyond call for sites boundaries

2.32 Following completion of Step 6, Figure 2.2 was produced illustrating the potential growth locations to be subjected to assessment. New transport infrastructure shown in this figure is limited to schemes which were judged to be of major significance to growth within Central Bedfordshire by 'opening up' less accessible areas; capacity upgrades to existing routes and schemes which will primarily improve accessibility of areas beyond the boundary of the study area were not included.

Note: Data outside the Study Area and Luton HMA is not complete.



NORTH CENTRAL BEDFORDSHIRE
Growth Options Study

Figure 2.2: Potential Growth Locations

LUC

- Study Area
- Luton Housing Market Area
- Local Authority boundary
- Motorway
- A Road
- Proposed rail improvement of significance to study
- Proposed road scheme of significance to study
- Railway
- Railway station
- Park & Ride
- Primary constraints
- Potential growth location
- Potential growth location within Luton HMA
- Existing or committed employment site
- Committed housing site

Source: LAs, NE, HE, EA, ITP, LUC

Map Scale @ A4: 1:215,000

Step 7. Determine dwelling capacity of locations

- 2.33 In order to assess how much infrastructure might be required or funded by housing development at each location it was necessary to make an estimate of the number of dwellings likely to be provided at each location.
- 2.34 Assumptions on gross to net ratios (see Table 2.3), density standards (Table 2.4), and development trajectory based on market conditions (see Appendix 2) were used to determine capacity for these locations.
- 2.35 Firstly, we reviewed the dwelling capacity methodologies employed by CBC, these are summarised below.

Central Bedfordshire Borough Council dwelling capacity approach³

Work out the number of new homes from site size using a density of 30 dwellings per hectare (dph) and exclude up to 40% of site area for infrastructure and services, depending on site size and taking into account topography or significant areas of undevelopable land. Site size for this calculation is the smaller of the submitted Developable Area or the area measured in GIS.

Site size gross to net ratio standards:

- Up to 0.4 hectare: 100%
- 0.4 to 2.0 hectares: 80%
- 2.0 hectares or above: 60%

- 2.36 Feedback from the commissioning authority indicated, however, that there should not be a fixed approach to densities and that the likely housing delivery at each location to 2035 should be estimated individually and in discussion with the Council. It was also considered reasonable to assume that higher densities should be achieved in more accessible locations such as around settlement centres and railway stations.
- 2.37 We therefore reviewed the existing viability evidence base for Central Bedfordshire, in order to select development mixes that could be applied depending on the characteristics of each location. Due to the high level nature of our viability assessment, we limited this selection to three, as below:
- **Houses, up to five-bed (30dph)** - CBC's latest viability evidence base assessed densities and development mixes ranging from 25dph to 55dph. We modelled the 30dph development mix as the lower density scenario, in line with Central Bedfordshire Council's methodology summarised above. This development mix does not include any flats, and includes houses up to five bedrooms.
 - **Houses, up to three-bed (44dph)** - We used information from the neighbouring Luton BC's latest viability evidence base, which includes a development mix entitled "contemporary development", comprising a mix of houses up to three bedrooms, but does not include any flats.
 - **Lower density low rise flats and terraced housing (55dph)** - We modelled CBC's highest density development mix (55dph) as one of our scenarios. This development mix comprises low rise flats and terraced properties only.
- 2.38 A development mix comprising higher density low rise flats and terraced housing, providing an average of 64dph, was also considered in detail, but this was not considered appropriate as an average for any of the locations after taking into account their scale.
- 2.39 Assumptions on gross to net ratios (see **Table 2.3**) and density standards (see **Table 2.4**) were applied, to estimate the total potential net dwelling capacity of locations, including potential housing delivery beyond the end of the plan period. These assumed total net dwelling capacity figures served as a guide to the amount of new infrastructure that might be supported by growth

³ Draft site assessment framework for housing v7, Central Bedfordshire Council, May 2016.

at each location and also facilitated the categorisation of locations by spatial option since locations needed to exceed a threshold capacity to be included in the 'new settlement' option.

Table 2.3: Assumptions on gross to net ratios for Growth Options Study

Location size	Proportion of location required for infrastructure and services	Proportion of location available for housing
Up to 0.4 ha	0%	100%
0.4 ha up to 2.0 ha	20%	80%
2.0 ha or above	40%	60%

Table 2.4: Assumptions on density standards for Growth Options Study⁴

Location category	Net density	Net density if within 1.2km of public transport interchange
Small (fewer than 2,000 units) infill / extension to village	30	55
Small (fewer than 2,000 units) infill / extension to settlement in top two tiers of hierarchy	30	55
Large (2,000 units or more) infill / extension to village (effectively a new settlement)	44	55
Large (2,000 units or more) infill / extension to settlement in top two tiers of hierarchy	44	55
New settlement	44	55

- 2.40 In order to estimate the dwelling capacity to 2035, we reviewed the document 'Housing Trajectory for Central Bedfordshire (Completions as at 30th June 2016)', drawing out benchmarks as detailed in Appendix 2. In the case of larger sites, we estimate that only a proportion of the total capacity could be delivered within this timeframe, depending on market conditions, delivery and sales rates.
- 2.41 Our development trajectories include allowances for pre-development periods. Note that all spatial options are assumed to have a five year lead in time assuming that changes are required to the policy framework to bring forward the sites for development. No additional pre-development period has been allowed for the installation of strategic infrastructure. These rules have been applied on a consistent basis across all of the sites.

Step 8. Define location assessment framework

- 2.42 Each location was subject to an assessment against an agreed framework to ensure consistency and transparency. Six broad types of assessment were carried out as follows.

⁴ The use of 'small' and 'large' in this instance is primarily for comparative purposes within the context of assumptions on density standards. It acknowledged that whether something is considered large or small, for example a village extension, is actually subjective and relative to location specific circumstances.

Potential constraints to development (see also descriptions of Step 2 and Step 3 above)

- 2.43 In light of the strategic nature of the Growth Options Study and the fact that it will be followed, in due course, by more detailed SHLAA and SA work, the assessment of sustainability performance was limited to a high level analysis of constraints and access to services and facilities at each location.
- 2.44 As previously described, areas of primary constraint were identified and screened out as potential locations for development. Assessment was therefore made of the secondary constraints present at each potential location for development.
- 2.45 Only constraints that intersected with potential development locations were identified; this was on the assumption that it should generally be possible to avoid adverse effects on receptors beyond a potential development location's boundary through appropriate development design, site layout, screening etc. This approach also reflected the fact that more detailed consideration of constraints would take place via CBC's SHLAA and Sustainability Appraisal (SA) processes.
- 2.46 See Appendix 1 for further information.

Access to services and facilities (see also description of Step 5 above)

- 2.47 Buffer areas representing indicative, straight line walking distances were mapped around a range of services and facilities, for example employment areas, education facilities and town centres. Analysis was then undertaken to determine which potential locations for development intersected with the walking catchments of which types of service or facility. The results were summarised in tabular form for all locations and also provided in a separate assessment sheet for each location and in the GIS datasets supplied alongside this report.

Contribution to Green Belt purposes

- 2.48 Green Belt will be an important issue for CBC in defining their spatial strategy and Green Belt assessment forms part of the evidence base for their Local Plan.
- 2.49 Whilst a significant part of Central Bedfordshire is Green Belt, the study area is only affected by Green Belt designation in the southern part of the western section and a very small section to the south of the eastern section. Whilst this study has not sought to intentionally exclude Green Belt locations, as a result of the location process none of the study locations fall within areas of Green Belt.
- 2.50 It is therefore acknowledged that whilst this study has been designed to be consistent with the Luton HMA Growth Options Study, as none of the locations fell within Green Belt it was not necessary to consider Green Belt performance, as done so in the Luton HMA Study, as such consideration would not be relevant. Notwithstanding this, for clarity, comparison and transparency purposes, Green Belt performance has been included in the overall results tables so that when the Growth Options Studies are read together, the irrelevance of Green Belt in the context of the North Study locations will not be mistaken for exclusion of its consideration altogether.

Deliverability

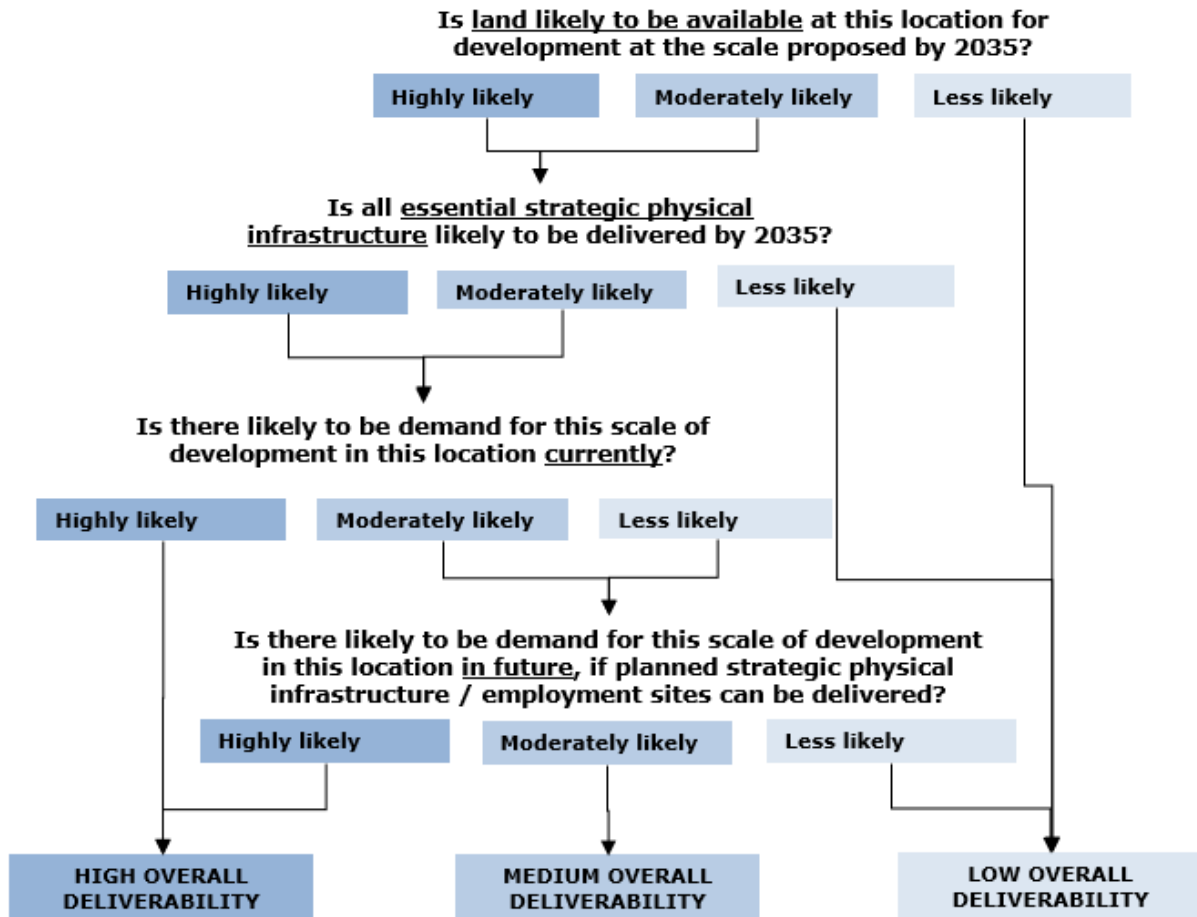
- 2.51 Deliverability was assessed based on the prospect of the 'entirety' of the location being delivered, at the assumed size, typology and dwelling capacity from Step 7. These assumptions informed our estimated delivery trajectories to 2035. However, the high-level nature of the study precludes an analysis of early phases or parts of locations being brought forward. Partial development may be possible, dependant on market conditions and trigger points for infrastructure enhancements. A more in-depth site specific analysis of individual locations would be required to consider this further.
- 2.52 In assessing the deliverability of each location, we asked four questions, and assessed the answers as set out in **Table 2.5**.
- 2.53 No landowner searches or consultation was carried out in carrying out the land availability assessment.

Table 2.5: Deliverability assessment criteria

Criteria / score	Highly likely	Moderately likely	Less likely
Is land likely to be available at this location for development at the scale proposed by 2035?	The entirety / majority of the site has been submitted by promoters through the Call for Sites process. The rest of the site comprises 'missing site(s)', and therefore the land availability is currently unknown. However, we are not specifically aware of any resistance to development by landowners.	A minority of the site has been submitted by promoters through the Call for Sites process. The rest of the site comprises 'missing site(s)', and therefore the land availability is currently unknown. However, we are not specifically aware of any resistance to development by landowners.	Known evidence of landowner resistance to development.
Is all essential strategic physical infrastructure likely to be delivered by 2035?	Essential strategic physical infrastructure projects are unplanned but minor, or; planned and highly likely to be delivered by 2035.	Essential strategic physical infrastructure projects are unplanned but modest, or; planned but moderately likely to be delivered by 2035.	Essential strategic physical infrastructure projects are unplanned and significant, or; planned and less likely to be delivered by 2035.
Is there likely to be demand for this scale of development in this location currently?	Qualitative consideration of factors including: quality of life (access to natural, cultural and leisure assets); convenient access to employment and amenities; affordability.		
Is there likely to be demand for this scale of development in this location in future, if planned strategic physical infrastructure / employment sites can be delivered?	Qualitative consideration of factors including: affordability; potential impact of regeneration / social / physical infrastructure / employment proposals; potential change in access to employment and amenities.		

2.54 The overall deliverability of each location was then determined as per the decision flow chart in Figure 2.3.

Figure 2.3 Overall deliverability assessment flow



2.55 The deliverability assessment covers the period to 2035, and does not take account of financial viability (which is considered separately, and is based on current demand, costs and values). The overall deliverability assessment is not intended to 'rule out' any locations; those locations assessed as having "Low" overall viability are not necessarily undeliverable, and the position may change in the future as a result of further infrastructure projects, economic development activity, regeneration initiatives, and so on. Reduction in scale of the location may also increase deliverability.

Viability

2.56 In assessing the viability of each location, we asked two questions, with the answers assessed as set out in **Table 2.6**.

Table 2.6: Viability assessment criteria

Criteria / score	Highly likely	Moderately likely	Less likely
Is development at the assumed density likely to be viable, if delivered on a cleared and serviced land parcel?	High level viability modelling suggests that development at the assumed density with policy compliant affordable housing provision exceeds the Threshold Land Value at current costs and values.	High level viability modelling suggests that development at the assumed density with zero affordable housing provision exceeds the Threshold Land Value at current costs and values.	High level viability modelling suggests that development at the assumed density does not exceed the Threshold Land Value at current costs and values, even with zero affordable housing provision.

Criteria / score	Highly likely	Moderately likely	Less likely
Is development at the assumed density likely to be viable, after accounting for potential local infrastructure and abnormal cost items?	High level viability modelling suggests that development at the assumed density with policy compliant affordable housing provision provides a meaningful contribution towards potential local infrastructure and abnormal cost items at current costs and values.	High level viability modelling suggests that development at the assumed density with zero affordable housing provision provides a meaningful contribution towards potential local infrastructure and abnormal cost items at current costs and values.	High level viability modelling suggests that development at the assumed density does not provide a meaningful contribution towards potential local infrastructure and abnormal cost items at current costs and values, even with zero affordable housing provision.

2.57 BBP Regeneration prepared a high level Residual Land Value viability model in order to establish the minimum average residential sales value required to achieve threshold land values for each location, with and without policy compliant affordable housing provision, given its:

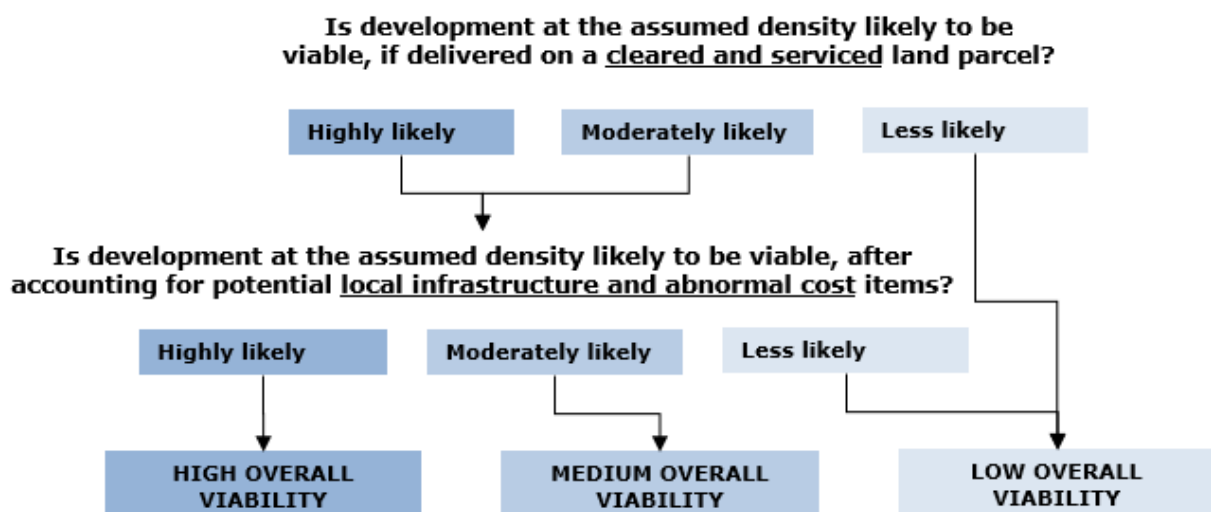
- Assumed density and development mix, applied based on the typology of the location.
- Previous land use (greenfield or brownfield threshold land value), applied based on information provided by the local authorities.

2.58 We then estimated the average residential sales value for each postcode sector within the study area, by analysing Land Registry price paid data from January 2013 to mid-2016, adjusting to mid-2016 prices, as well as adjusting second hand values to reflect new build premium where evident (cross referenced with Zoopla predicted average asking prices, and comparables analysis of asking prices on Rightmove).

2.59 We then compared the minimum average sales values (with and without policy compliant affordable housing provision) against the estimated average residential sales value for each location.

2.60 The overall viability of each location was then determined as per the decision flow chart in Figure 2.4.

Figure 2.4 Overall viability assessment flow



- 2.61 The overall viability assessment provides a snapshot based on current demand, costs and values. However, commentary within the deliverability assessment provides a high level assessment of potential future demand over the study period.
- 2.62 It is important to note that the deliverability of each location could be improved with new or upgraded infrastructure provision. Such improvements to public transport and / or road network will also impact on viability with increased values resulting from improved access to employment or local facilities. This is particularly important where a strategic / large site is not performing well, in which case consideration needs to be given as to how some of the deliverability or viability constraints could be mitigated to improve the assessment of deliverability.

Transport and Access to Employment

- 2.63 To provide further detailed transport focused assessment beyond the proximity tests which form part of the accessibility to services and facility analysis already undertaken, ITP have used a number of additional indicators to refine the assessment of accessibility at each of the assessed locations.
- 2.64 These indicators were used firstly to assess in relative terms how locations perform under existing conditions. For three of the indicators – public transport accessibility, road accessibility and indicative traffic conditions – assumptions on future committed and planned infrastructure and its impact were then used to assess the performance of each location in the future. Finally, an assessment was made of how each site’s performance could potentially be improved through sustainable transport infrastructure improvements funded by developer contributions.
- 2.65 This assessment acknowledges the importance of commuter trips to and from housing locations due to the potential implications of development on the transport network and therefore uses accessibility to employment as the key driver of sites’ performance from a transport perspective.
- 2.66 The indicators, which are described in further detail within Table 2.7 and make up this part of the assessment are as follows:
- **Key Commuter Travel Mode Split - Public Transport:** As set out by current National Planning Practice Guidance, this indicator is included to help support patterns of development that are more likely to promote the use of sustainable transport modes, and is based on 2011 Census data. It is a good indicator of whether a growth location is well located in relation to public transport facilities and services.
 - **Key Commuter Travel Mode Split - Active Travel:** As defined by Public Health England⁵, active travel means walking and cycling ‘as an alternative to motorised transport for the purpose of making every day journeys’. This is a good indicator of whether a location is well-located in relation to walking and cycling routes, and generally within easy reach of employment opportunities by these modes. It is based on 2011 Census data.
 - **Public Transport Accessibility:** This indicator seeks to assess how accessible by public transport the location is to jobs in the morning peak period when demands on the transport network are expected to be the greatest. The rationale being that the more jobs that are accessible by public transport within a travel time of 60 minutes, the more use is likely to be made of public transport to and from the growth location, helping manage transport network capacity more effectively.
 - **Road Accessibility:** This indicator recognises the rural nature of the study area. It seeks to promote employment opportunities at a local level as a way to support local economies and reduce the need for long distance travel. The rationale being that having more jobs accessible within 30 minutes by road will reduce travel distances.
 - **Indicative Traffic Conditions:** This indicator provides an indication of road traffic delays on motorways and A-roads in the vicinity of the site and uses Traffic Master speed data. It recognises the importance of the strategic road network and the potential economic, social and environmental impacts of road traffic delays within the road network.

⁵ ‘Working Together to Promote Active Travel, A briefing for local authorities’

- **Personal Injury Collisions:** National planning guidance suggests that road safety should be considered at an early stage in the plan making process and this indicator reflects personal injury collision records with emphasis on fatal and serious incidents. It helps identify growth locations with poor road safety records and potential opportunities to alleviate existing road safety issues in the wider road network.
- **Main Train Station Car Park Facilities (to facilitate park and ride):** This indicator recognises the role of employment destinations which are outside of the study area. It seeks to support behavioural change in relation to long distance travel to support the use of sustainable modes of transport. It provides an indication of the opportunities for park and ride at rail stations and is measured by the size of the car park at the closest mainline station.

2.67 It should be noted that these indicators were split into three different categories namely public transport indicators, road indicators and other indicators. This was done in order that sites' performance could be examined in terms of its accessibility by sustainable modes separately from private car transport. A description of each indicator and the category that each indicator falls under is set out in **Table 2.7** below:

Table 2.7: Transport Assessment Indicators

RAG Assessment Indicator	Description	Category
Key Commuter Travel Mode Split: Public Transport	Defined as the share of public transport trips to travel to work. This is based on 2011 Census journey to work mode share data for closest Lower Super Output Area ⁶ . This is a key indicator as it helps highlight well-located locations in relation to public transport facilities and services.	Public Transport Indicator
Key Commuter Travel Mode Split: Active Travel	Defined as the share of walking / cycle trips to travel to work. This is based on 2011 Census journey to work mode share data for closest Lower Super Output Area. Although this indicator is considered, the rural nature of the study area limits the opportunities associated to active travel.	Other Indicator
Public Transport Accessibility	Number of jobs within 60 minutes by public transport. This indicator was estimated for existing and assumed future conditions. Number of jobs was based on 2011 census data. This is a key indicator to help promote public transport.	Public Transport Indicator

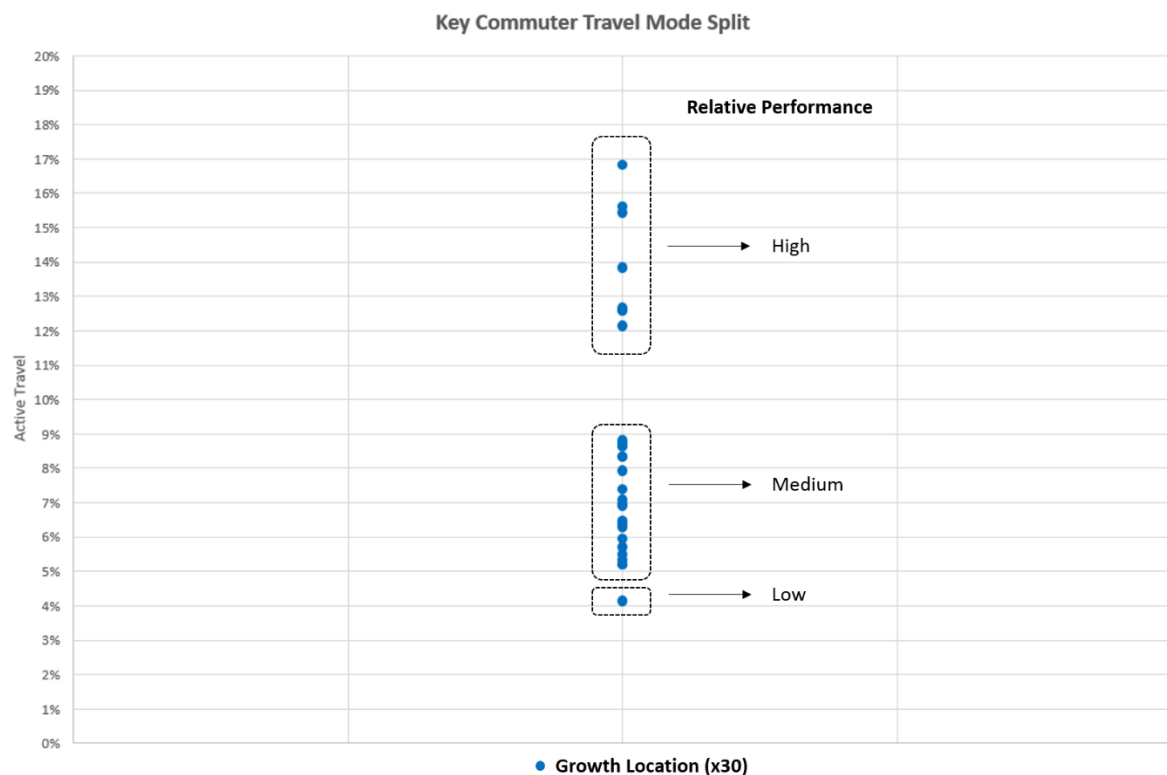
⁶ Super Output Area: As defined by the Office for National Statistics (ONS) Super Output Areas (SOAs) 'are a geography designed for the collection and publication of small area statistics'. There are currently two types of areas namely Lower and Middle SOAs that are used for the purpose of establishing suitable comparisons across National Statistics. The minimum size of Lower SOAs is 1,000 residents and 400 households. Proximity and social background are taken into account for the definition of areas.

RAG Assessment Indicator	Description	Category
Road Accessibility	Number of jobs within 30 minutes by road. This indicator was estimated for existing and assumed future conditions. Number of jobs was based on 2011 census data. This indicator seeks to reduce the need for long distance travel.	Road Indicator
Indicative Traffic Conditions	<p>Total length of motorways and A roads that might be experiencing speed reductions greater than or equal to 30%, relative to free-flow conditions using Traffic Master speed data issued by DfT.</p> <p>This indicator applied speed differentials for AM peak speeds based on a comparison with evening speeds. Total length included all roads contained within a circle from the centre of each growth option (Radius = 5,000m). Indicator was estimated for existing and assumed future conditions. No allowance in the future was made for development generated traffic or predicted changes in future traffic levels.</p>	Road Indicator
Personal Injury Collisions	Indicative number of fatal and serious collisions per Ha. Collisions involve all vehicle types and on roads within 1,000m of the perimeter of each growth option. This indicator was based on publicly available data for the period between 2011 and 2015.	Other Indicator
Main Train Station Parking Facilities	Defined as the car park capacity at each of the four mainline stations within the study area. This is a key indicator that seeks to support behavioural change in relation to long distance travel.	Public Transport Indicator

2.68 Indicators were estimated for each growth location to better understand the possible transport implications of development.

2.69 Thresholds were defined based on relative performance for all growth locations and noticeable gaps observed in the combined data. This process results in locations being graded using a three tiered scale (High, Medium, and Low). Figure 2.5 gives an example, depicting the share of walking / cycle trips to travel to work for all of the potential growth locations.

Figure 2.5 Example of grading results into 'High', 'Medium' or 'Low'



- 2.70 This process enabled ITP to produce a graded assessment that focuses on allowing comparison between sites and subsequently to compare relative performance across different growth options by applying a simplified multi-criteria analysis⁷.
- 2.71 To produce the multi-criteria analysis, the indicators have been combined and scores weighted in favour of public transport related indicators (i.e. a key objective in line with national policy objectives). The key features and limitations of the methodology behind the combined scores are set out in detail in ITP's detailed method in Appendix 4.
- 2.72 The results of individual indicators and the weighted analysis are presented in tabular form and maps within the results chapter of this report.
- 2.73 This analysis represents an initial step to support CBC with the preparation of their spatial strategy. Transport inputs did not examine transport infrastructure capacity constraints. Consequently, no account was taken of existing capacity issues, other than through the actual road speeds used in the road accessibility and traffic conditions indicators, or capacity implications associated with future transport infrastructure needs.
- 2.74 Readers should focus on the graded assessment outcomes to provide a comparison between locations rather than the detailed numbers available in individual location pro-formas, as there are various assumptions that lie behind the analysis that were consistently applied to individual growth options (further details are available in the detailed methodology at Appendix 4).
- 2.75 The key aim of the assessment approach is to deliberately dilute the detail and subjectively group results to provide the initial evidence base. In line with the NPPG, this is intended to inform the

⁷ Multi-criteria analysis is a decision making support technique commonly used for the appraisal of options and other decisions. This technique does not necessarily rely on monetary valuations and enables analysts to establish preferences based on a defined objective or set of objectives. Detailed information for this technique can be found in the 'Multi-criteria analysis: a manual' produced by the Department for Communities and Local Government (January 2009)

future option testing stage and the preparation of the detailed transport evidence base. It is recognised that a team of transport consultants is currently in the process of updating the Central Bedfordshire and Luton Transport Model, which is expected to provide CBC with a key appraisal tool to ascertain the impact of housing growth within the study area.

- 2.76 ITP’s analysis did not seek to identify the impacts of specific sites or the details of specific mitigation measures that might be required. For example, all developments and particularly those of a significant size would generate trips (public transport and private vehicle) that would add additional traffic onto the network. Depending on the location this could have significant localised impacts on network performance. For large, strategic developments, wider network effects could also be expected where for example, motorway junctions or trunk roads are already at or close to capacity. This more detailed analysis is expected to be undertaken in the next stage of assessment using strategic transport modelling tools.

Step 9. Establish infrastructure constraints and opportunities

- 2.77 Infrastructure constraints and opportunities have been considered as part of our methodology, based upon the best available evidence. It should be stressed that this is a high level assessment based on a largely generic set of assumptions; however, each location will have its own unique infrastructure requirements that can only be fully tested on a site-specific basis.

Establishing a baseline of existing and future infrastructure assets likely to be delivered by 2035

- 2.78 GIS information was provided by CBC relating to existing social and physical infrastructure assets (see Step 5).
- 2.79 Infrastructure Delivery Plans were reviewed in order to establish known utilities infrastructure requirements relevant to each location.
- 2.80 Local Transport Plans were reviewed to establish potential future transport projects. Consultation with transport planners from CBC informed an assessment of the likelihood of delivery for each potential future transport project by 2035, and routes were digitised into GIS based on the best available information. A schedule outlining the potential future transport projects considered is provided at Appendix 3.

Considering the impact of strategic transport infrastructure on dwelling capacity

- 2.81 Proximity to existing and / or planned public transport interchanges and strategic roads was considered in determining the typology of each location (see Step 11). In turn, the typology determined the assumed density for that location.

Considering the impact of infrastructure requirements on deliverability / viability

- 2.82 **Table 2.8** summarises the approach to deliverability / viability across the range of infrastructure requirements considered.

Table 2.8: Impact of infrastructure on deliverability / viability

Infrastructure category	Strategic physical infrastructure	Local physical infrastructure	Social infrastructure
Examples of relevant infrastructure	Physical infrastructure comprises transport and utilities. Strategic infrastructure for these purposes was considered as infrastructure that is less scalable – that is, each asset or upgrade creates significant additional capacity, often beyond the immediately	Physical infrastructure comprises transport and utilities. Local infrastructure for these purposes was considered as infrastructure that is more scalable – that is, each asset or upgrade can be tailored to the immediately proposed scale of development	Social infrastructure comprised health, education, and community infrastructure.

Infrastructure category	Strategic physical infrastructure	Local physical infrastructure	Social infrastructure
	proposed scale of development (e.g. new gas / water mains, power plant, railway station).	(e.g. local service connections / diversions, SUDS, district heating network).	
Assumed funding mechanism	Statutory authority and mainstream public sector funding commitments in line with housing and employment growth. Developer contributions may be available, depending on viability.	Land and funding generally secured through developer contributions. Where viability poses a development constraint, gap funding may be sought from the public sector in order to unlock growth.	Statutory authority and mainstream public sector funding commitments in line with housing and employment growth. Land and gap funding secured through developer contributions, depending on viability.
Approach to deliverability / viability assessment model	<p>Known utilities infrastructure requirements were noted and considered in deliverability assessment.</p> <p><i>N.B. Site-specific work beyond the scope of this commission may result in the identification of additional utilities infrastructure requirements, particularly as the existing evidence base upon which we have relied will have focused around known, committed growth locations at the time of their preparation.</i></p> <p>Likelihood of delivery of essential strategic transport infrastructure (see table below) by 2035 were considered in deliverability assessment, with regard to current funding status.</p> <p>High level qualitative assessment of accessibility (with regard to proximity, routes, and congestion) to both employment and amenities, and; key quality of life attractions (natural, cultural and</p>	<p>Headroom in excess of threshold land values on a cleared and serviced site considered in viability assessment.</p> <p><i>N.B. Site-specific work beyond the scope of this commission may result in the identification of additional local physical infrastructure requirements beyond the levels considered in our viability assessment.</i></p>	<p>Headroom in excess of threshold land values on a cleared and serviced site considered in viability assessment.</p> <p><i>N.B. Secondary schools have considerable land and funding requirements, and often create capacity beyond the immediately proposed scale of development. Demand for secondary schools is dependent on factors such as the nature and affordability of new development, catchment areas / accessibility, current unmet demand and relationships with feeder schools, current utilisation / capacity for growth of existing assets, and demographic profiles of the existing and new population – assessment of this demand is beyond the scope of this commission. At some locations, this may result in the identification of significant investment requirements beyond the levels considered in our viability assessment.</i></p>

Infrastructure category	Strategic physical infrastructure	Local physical infrastructure	Social infrastructure
	leisure assets) were considered in assessing likely current and potential future demand for development of the assumed scale in each location. In turn, this impacted on the overall deliverability assessment.		

The assumptions in **Table 2.9** were made in determining the essential strategic transport infrastructure requirements for each location, alongside an assessment of whether these requirements existed already, or were likely to be delivered by 2035. In turn, this impacted on the overall deliverability assessment.

Table 2.9: Strategic transport infrastructure assumptions

Number of units	Village extension	Urban extension	New settlement
0-499 units	If strategic road within 1.0km, assume only local access works required. If not within 1.0km of strategic road, assume moderate improvements in access to strategic road network required.	If strategic road within 1.0km, assume only local access works required. If not within 1.0km of strategic road, assume moderate improvements in access to strategic road network required.	n/a
500-1,999 units	If strategic road within 1.0km, assume minor improvements in access to strategic road network required. If not within 1.0km of strategic road, assume moderate improvements in access to strategic road network required.	If strategic road within 1.0km, assume minor improvements in access to strategic road network required. If not within 1.0km of strategic road, assume moderate improvements in access to strategic road network required.	n/a
2,000+ units	See 'New settlement'	If strategic road within 1.0km, and within 1.2km of public transport interchange, assume minor improvements in transport infrastructure required. If not within 1.0km of strategic road, but within 1.2km of public transport interchange, assume	If strategic road within 1.0km, and within 1.2km of public transport interchange, assume minor improvements in transport infrastructure required. If not within 1.0km of strategic road, but within 1.2km of public transport interchange, assume

Number of units	Village extension	Urban extension	New settlement
		<p>moderate improvements in transport infrastructure required.</p> <p>If strategic road within 1.0km, but not within 1.2km of public transport interchange assume moderate improvements in transport infrastructure required.</p> <p>If not within 1.0km of strategic road, and not within 1.2km of public transport interchange, assume significant improvements in transport infrastructure required.</p>	<p>moderate improvements in transport infrastructure required.</p> <p>If within 1.0km of strategic road, but not within 1.2km of public transport interchange, assume significant improvements in transport infrastructure required.</p> <p>If not within 1.0km of strategic road, and not within 1.2km of public transport interchange, assume significant improvements in transport infrastructure required.</p>

Considering strategic growth opportunities along public transport interchanges and transport corridors

- 2.83 A commentary was provided highlighting where existing / planned transport infrastructure presented opportunities for housing and employment growth (see Chapter 4).

Considering opportunities for new strategic transport infrastructure to support housing and employment growth

- 2.84 It was acknowledged that major development sites have the potential to attract significant developer contributions that could fundamentally change the accessibility characteristics of a site. Whilst it is not possible to foresee the precise composition of such measures at this stage, a commentary was also provided highlighting where new public transport infrastructure could unlock housing and / or employment growth (see Chapter 4).

Step 10. Assess locations

- 2.85 Each location was assessed against the framework of criteria defined in Step 8 above. Assessments were desk-based, supported by GIS proximity analysis and reference to relevant documentary sources. Assessment results are summarised in Chapter 3 and presented as a standard form and boundary map for each location in Appendix 5.

Step 11. Define spatial options

- 2.86 Spatial options are different thematic groupings of locations. The following five themes were agreed with CBC:
- new settlements;
 - village extensions;
 - growth in transport corridors;
 - urban extensions; and
 - urban intensification around public transport hubs.
- 2.87 Potential development locations were allocated to one or more of the spatial options, using the criteria set out in **Table 2.10** for guidance. These criteria were not intended to provide an

assessment of the location but merely to help generate alternative spatial distributions of development in a transparent and consistent way.

Table 2.10: Guidance framework for including locations within spatial options

Spatial option	Criteria: location considered for inclusion if...
<p>New settlements</p> <p>Criteria are based on achieving clear separation from the Central Bedfordshire's largest existing settlements and on achieving a sufficient location size to support provision of a broad range of services and facilities.</p>	<p>Location boundary > 1.0 km from the edge of an existing settlement (or permitted extension to an existing settlement) in the top tier of the local authority's settlement hierarchy, <i>and</i></p> <p>Location has capacity for > 2,000 dwellings.</p>
<p>Village extensions</p> <p>Criteria are based on identifying locations that are on the edge of Central Bedfordshire's smaller settlements.</p>	<p>Location boundary < 100 m from boundary of existing settlements below the top tier of the settlement hierarchy.</p>
<p>Growth in transport corridors</p> <p>Criteria are based on identifying locations that have good access to the strategic transport network.</p>	<p>Location boundary < 1.2 km from a railway station, guided busway stop or park and ride facility <i>or</i></p> <p>Location boundary < 1.0 km from an A-road or motorway</p>
<p>Urban extensions</p> <p>Criteria are based on identifying locations that are on the edge of Central Bedfordshire's largest settlements.</p>	<p>Location boundary < 100 m from the edge of an existing settlement (or permitted extension to an existing settlement) in the top tier of CBC's settlement hierarchy, <i>and</i></p> <p>Location is not contained within the existing urban area.</p>
<p>Urban intensification around public transport hubs</p> <p>Criteria are based on identifying locations that have good access to public transport hubs.</p>	<p>Location boundary < 1.2 km from an existing or proposed public transport hub (railway station, guided busway stop or park and ride facility).</p>

2.88 While settlement hierarchies may be subject to change through the Local Plan process, for the purposes of categorising locations according to the rules in Table 2.10, settlements in the 'top tier' of CBC's settlement hierarchy were assumed to be as follows:

- Ampthill
- Biggleswade
- Dunstable
- Flitwick
- Houghton Regis
- Leighton Buzzard
- Sandy
- Wixams

Step 12. Assess relative performance of locations within spatial options

2.89 Having allocated locations to spatial options, the relative performance of all locations within each spatial option was compared, drawing on the results of the separate assessments of constraints, accessibility, Green Belt, deliverability, viability and transport. This was intended to provide a selection of building blocks from which future alternative spatial strategies could be generated through the Local Plan process.

3 Results

- 3.1 This chapter summarises the results of the assessments of constraints, access to services and facilities, access to employment, Green Belt, deliverability, viability and transport.

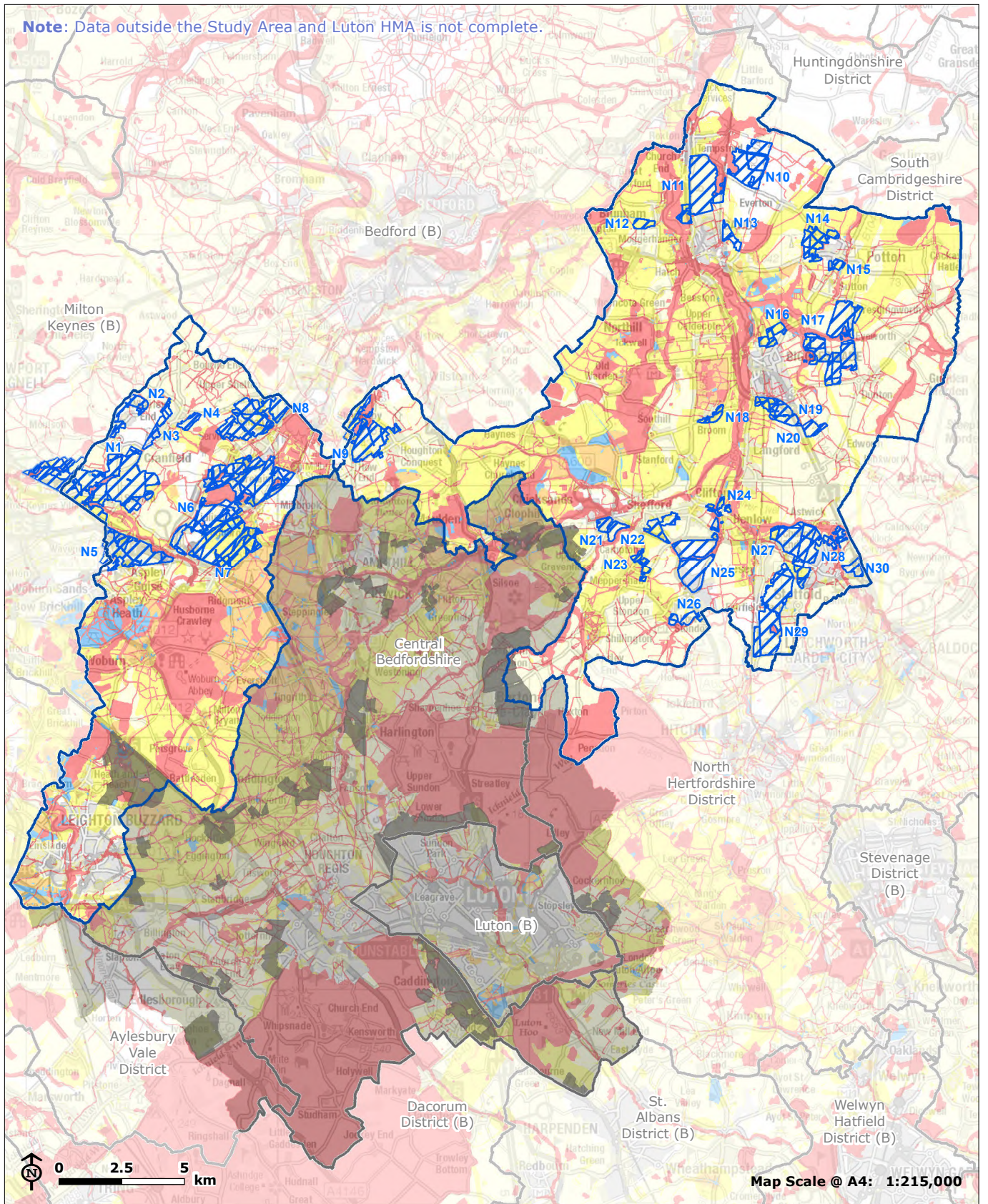
Constraints

- 3.2 As explained in the methodology chapter, none of the potential locations for development are within an area of primary constraint such as a national biodiversity or landscape designation as these areas were excluded from consideration as possible locations for growth. The types of secondary constraint to which the locations are subject are summarised in **Table 3.1**.
- 3.3 The analysis shows that all potential locations for development are subject to a range of secondary constraints, the most common relating to biodiversity, soil quality, and flood risk. Conversely, none of the locations are subject to secondary constraints relating to air quality, and very few are constrained in relation to water quality or energy infrastructure.
- 3.4 Note that the methodology only reveals presence or absence of constraints within the potential growth locations; it does not assess the proportion of the location subject to particular constraints. Furthermore, it does not assess the potential impacts of growth at the locations on environmental receptors beyond their boundaries, for example potential impacts on the setting of historic assets or setting of designated landscapes are not considered. As indicated earlier within this report, more detailed work is being undertaken through CBC's SHLAA process.
- 3.5 The results of the constraints analysis are illustrated by which shows those parts of the study area subject to primary constraints as well as the number of different secondary constraints present in the remainder of the study area.
- 3.6 Further representations of the results of the constraints analysis are provided in the location assessment forms in Appendix 5 and the GIS datasets supplied alongside this report.

Table 3.1: Secondary constraints present within potential development locations

ID	Location name	Listed Building	Conservation Area	Priority Habitat Inventory	Locally esignated wildlife site	Local Nature Reserve	Local geological site	Locally identified sensitive landscape	Current AQMA	Grade 1, 2 or 3 agricultural land	Source Protection Zone 1 or 1c	Flood Zone 2	Surface water flooding (1:100)	High voltage electricity line <400m	Mineral Safeguarding Area	Sustrans national cycle route	Publicly accessible open space	No. of secondary constraints
N1	Salford	No	No	Yes	Yes	No	No	No	No	Yes	No	Yes	Yes	No	Yes	Yes	No	7
N2	Wharley End West	No	No	Yes	No	No	No	No	No	Yes	No	No	Yes	No	No	No	No	3
N3	Cranfield West	No	No	Yes	No	No	No	No	No	Yes	No	No	Yes	No	No	No	No	3
N4	Cranfield East	No	No	No	No	No	No	No	No	Yes	No	No	Yes	No	No	No	No	2
N5	M1 J13	No	No	Yes	Yes	No	No	Yes	No	Yes	No	Yes	Yes	No	No	No	No	6
N6	Marston Moretaine South-Lidlington-Brogborough	No	No	Yes	Yes	No	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	9
N7	Lidlington South	Yes	No	Yes	Yes	No	No	Yes	No	Yes	No	No	Yes	No	No	No	No	6
N8	Marston Moretaine North	Yes	No	Yes	No	No	No	No	No	Yes	No	No	Yes	Yes	No	Yes	No	6
N9	Wixams-Stewartby-Houghton Conquest	No	No	Yes	Yes	No	Yes	No	No	Yes	No	Yes	Yes	No	Yes	No	No	7
N10	Sandy North East	Yes	No	Yes	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	6
N11	Sandy North West	No	No	Yes	No	No	No	No	No	Yes	No	Yes	Yes	No	Yes	No	No	5
N12	Blunham South	No	No	Yes	Yes	No	No	No	No	Yes	No	No	Yes	No	Yes	No	No	5
N13	Sandy East	No	No	Yes	No	No	No	No	No	Yes	No	No	Yes	Yes	No	No	No	4
N14	Potton West	No	No	Yes	Yes	No	No	No	No	Yes	No	No	Yes	No	Yes	No	No	5
N15	Potton South	No	Yes	Yes	No	No	No	No	No	No	No	Yes	Yes	No	Yes	No	No	5
N16	Biggleswade North	No	No	Yes	No	No	No	No	No	Yes	No	No	Yes	No	Yes	Yes	Yes	6
N17	Sutton-Biggleswade	No	Yes	Yes	No	No	No	Yes	No	Yes	No	Yes	Yes	Yes	No	No	No	7
N18	Broom	No	No	No	No	No	No	No	No	Yes	No	No	Yes	No	Yes	No	No	3
N19	Biggleswade South	Yes	No	Yes	No	No	No	No	No	Yes	No	No	Yes	No	Yes	Yes	Yes	7
N20	South of Biggleswade	No	No	No	No	No	No	No	No	Yes	Yes	No	Yes	No	No	No	No	3
N21	Shefford West	No	No	Yes	No	No	No	No	No	Yes	No	Yes	Yes	No	No	No	No	4
N22	Shefford South-Clifton	No	No	Yes	Yes	No	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	6
N23	Meppershall	No	No	Yes	No	No	No	Yes	No	Yes	No	No	Yes	No	No	No	No	4
N24	Henlow-Clifton	No	Yes	Yes	No	No	No	No	No	Yes	No	Yes	Yes	No	Yes	No	Yes	7
N25	Henlow Airfield	Yes	No	No	Yes	No	No	No	No	Yes	No	Yes	Yes	No	No	No	No	5
N26	Henlow Camp-Lower Stondon	No	No	No	No	No	No	Yes	No	Yes	No	Yes	Yes	No	No	No	No	4
N27	North of Church End	Yes	Yes	Yes	No	No	No	No	No	Yes	No	Yes	Yes	No	Yes	Yes	No	8
N28	Stotfold West	No	Yes	Yes	No	No	No	No	No	Yes	No	Yes	Yes	No	No	Yes	Yes	7
N29	Arlesey-Fairfield Park	No	No	Yes	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No	Yes	5
N30	Stotfold East	No	No	No	No	Yes	No	No	No	Yes	No	No	Yes	No	No	No	Yes	4

Note: Data outside the Study Area and Luton HMA is not complete.



Map Scale @ A4: 1:215,000

- Study Area
- Luton Housing Market Area
- Local Authority boundary
- Potential growth location
- Potential growth location within Luton HMA
- Primary constraint

Number of secondary constraints	
	1
	2
	3
	4 - 6
	7 - 9

NORTH CENTRAL BEDFORDSHIRE
Growth Options Study

Figure 3.1: Primary and Secondary Constraints within Study Area

LUC

Source: Local Authorities, Natural England, English Heritage, National Grid, Sustrans, ODC, Environment Agency, LUC

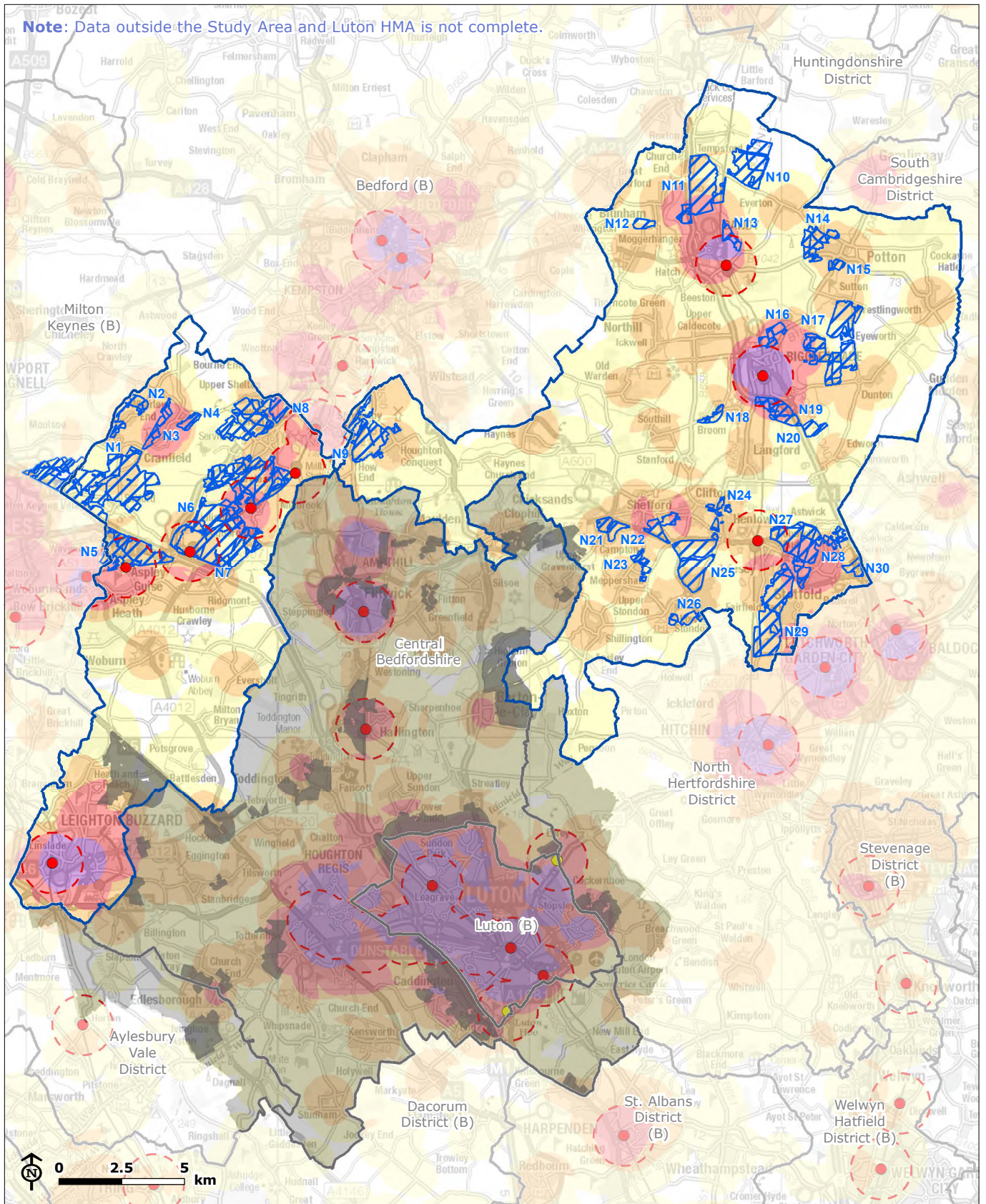
Access to services and facilities

- 3.7 The types of different services and facilities present within indicative, straight line walking distance of the closest boundary of each of the assessed locations are summarised in **Table 3.2**. As explained in the methodology, this proximity analysis takes account of both existing services and facilities and those assumed to be provided when large (100 hectares or more) committed housing development sites are delivered. The method of this analysis is such that distances are measured from the closest boundary of each location to the service or facility in question; it should be noted therefore that it is possible in some circumstances that the entirety of a location may not fall within the indicative straight line walking distance of a service or facility when recorded as a 'yes' within the analysis results. Rather, a 'yes' result indicates that at least some part of the location falls within the specified indicative distance.
- 3.8 The analysis shows that all locations are accessible to bus stops and publicly accessible open spaces, and almost all are accessible to lower, middle or primary schools. Conversely, relatively few locations are within walking distance of a town centre, local / neighbourhood centre or a railway station, guided busway stop or park and ride facility.
- 3.9 Whilst many of these types of service or facility can be expected to be provided wherever the demand for them arises, this is less likely to be the case for public transport hubs which will generally involve more significant capital investment, longer lead times and / or greater political commitment.
- 3.10 The results of the constraints analysis are illustrated by **Figure 3.2**. Also shown is the total number of types of service or facility within walking distance of each area of the study area.
- 3.11 The results of the analysis of access to services facilities are also provided for each location in the assessment forms in Appendix 5.

Table 3.2: Services and facilities present within indicative walking distance of potential development locations

ID	Location name	Railway stations, guided busway stops and park and ride facilities (1.2 km)	Major employment areas (2.0 km)	Town centres and major out of centre retail parks (0.8 km)	Publicly accessible open spaces (1.2 km)	Secondary or upper schools and further or higher education establishments (2.0 km)	Lower, middle or primary schools (1.0 km)	Local / neighbourhood centres (0.4 km)	NHS primary healthcare (GPs) and hospitals (1.2 km)	Bus stops, inc. stops on non-guided sections of guided busway (0.8 km)
N1	Salford	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes
N2	Wharley End West	No	Yes	No	Yes	Yes	No	No	Yes	Yes
N3	Cranfield West	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes
N4	Cranfield East	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes
N5	M1 J13	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
N6	Marston Moretaine South-Lidlington-Brogborough	Yes	Yes	No	Yes	No	Yes	No	No	Yes
N7	Lidlington South	Yes	Yes	No	Yes	No	Yes	No	No	Yes
N8	Marston Moretaine North	No	Yes	No	Yes	Yes	Yes	No	No	Yes
N9	Wixams-Stewartby-Houghton Conquest	Yes	Yes	No	Yes	No	Yes	No	No	Yes
N10	Sandy North East	No	Yes	No	Yes	No	No	No	No	Yes
N11	Sandy North West	No	Yes	No	Yes	Yes	Yes	No	No	Yes
N12	Blunham South	No	No	No	Yes	No	Yes	No	No	Yes
N13	Sandy East	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
N14	Potton West	No	No	No	Yes	Yes	Yes	No	Yes	Yes
N15	Potton South	No	No	No	Yes	Yes	Yes	No	Yes	Yes
N16	Biggleswade North	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
N17	Sutton-Biggleswade	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes
N18	Broom	No	Yes	No	Yes	No	No	No	No	Yes
N19	Biggleswade South	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
N20	South of Biggleswade	No	Yes	No	Yes	No	No	No	No	Yes
N21	Shefford West	No	No	No	Yes	Yes	Yes	No	No	Yes
N22	Shefford South-Clifton	No	No	No	Yes	Yes	Yes	No	Yes	Yes
N23	Meppershall	No	No	No	Yes	Yes	Yes	No	No	Yes
N24	Henlow-Clifton	No	No	No	Yes	Yes	Yes	No	No	Yes
N25	Henlow Airfield	No	No	No	Yes	Yes	Yes	No	Yes	Yes
N26	Henlow Camp-Lower Stondon	No	No	No	Yes	No	Yes	No	Yes	Yes
N27	North of Church End	Yes	No	No	Yes	Yes	No	No	Yes	Yes
N28	Stotfold West	No	No	No	Yes	Yes	Yes	No	Yes	Yes
N29	Arlesey-Fairfield Park	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes
N30	Stotfold East	No	No	No	Yes	Yes	Yes	No	Yes	Yes

Note: Data outside the Study Area and Luton HMA is not complete.



- Study Area
- Luton Housing Market Area
- Local Authority boundary
- Potential growth location
- Potential growth location within Luton HMA

- Railway station
- Park & Ride
- 1200m from rail station, guided busway stop or park & ride

Number of accessible services

- | | | | |
|--|-------|--|-------|
| | 1 - 2 | | 5 - 6 |
| | 3 - 4 | | 7 - 9 |

NORTH CENTRAL BEDFORDSHIRE
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Figure 3.2: Access to Services and Facilities within Study Area

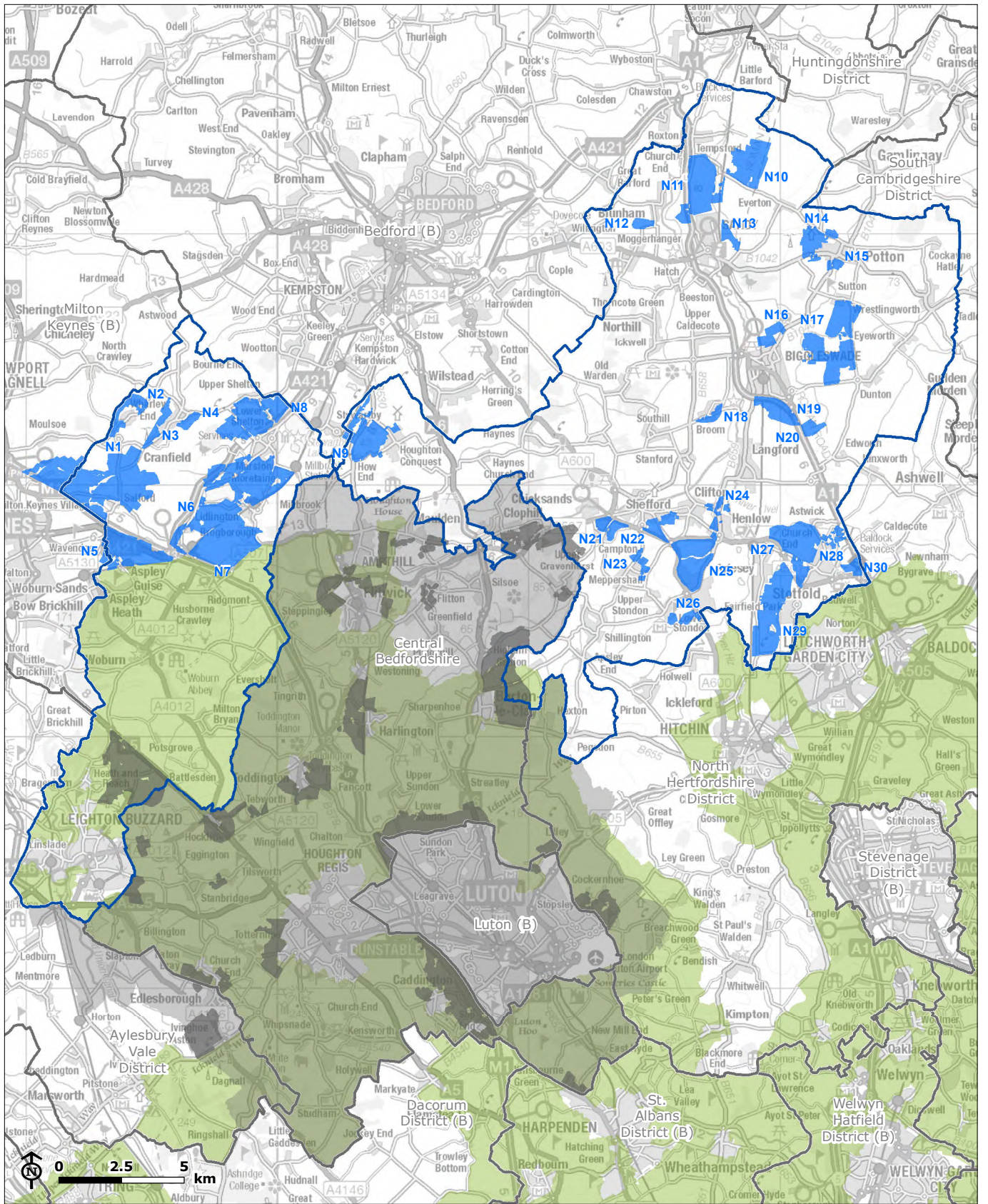
LUC

Source: Local Authorities, LUC

Map Scale @ A4: 1:215,000

Green Belt

- 3.12 Green Belt will be an important issue for CBC in defining their spatial strategy and a detailed Green Belt assessment will form part of the evidence base for the CBC Local Plan. It is therefore important that Green Belt be acknowledged and taken into account within this Growth Options Study.
- 3.13 Notwithstanding the above, whilst the method of location selection has been consistent with the other Growth Options Study which covers the southern part of Central Bedfordshire (i.e. the Luton HMA Growth Options Study), circumstances are such, that none of the locations which comprise this study of North Central Bedfordshire fall within the Green Belt. It is therefore considered that further analysis in terms of the contribution of parcels of land to the purpose of the Green Belt is not required in this instance.
- 3.14 For reference purposes, the map in **Figure 3.3** indicates the assessment locations of this Growth Options Study in relation to areas of Central Bedfordshire designated as Green Belt.



- Study Area
- Luton Housing Market Area
- Local Authority boundary
- Green Belt

- Potential growth location
- Potential growth location within Luton HMA

NORTH CENTRAL BEDFORDSHIRE
Growth Options Study

Figure 3.3: Extent of Green Belt

LUC

Source: Local Authorities, DCLG, LUC

Map Scale @ A4: 1:215,000

Dwelling capacity and delivery trajectories

3.15 The results of the determination of dwelling capacity for each location are provided in **Table 3.3** and show that:

- The assumed total net capacity of the locations ranges from 315 to almost 17,500.
- Locations with an assumed dwelling capacity below 2,500 are generally capable of being delivered in their entirety by 2035.
- Two locations have some of their site area outside of Central Bedfordshire: N1 (Salford) and N5 (M1 J13). Both of these locations cross the boundary of Central Bedfordshire into Milton Keynes.

Table 3.3: Assumed dwelling capacity, and estimated delivery to 2035

Location ID	Site area (ha)	Site area within Central Bedfordshire (%)	Assumed typology	Assumed density	Assumed total net capacity	Estimated net capacity to 2035
N1 - Salford	662.40	77%	Large new settlement / village extension, not in close proximity to public transport interchange	44	17,487	2,500
N2 - Wharley End West	75.40	100%	Small village extension, not in close proximity to public transport interchange	30	1,357	1,357
N3 - Cranfield West	47.50	100%	Small village extension, not in close proximity to public transport interchange	30	855	855
N4 - Cranfield East	26.40	100%	Small village extension, not in close proximity to public transport interchange	30	475	475
N5 - M1 J13	241.00	93%	Large new settlement / village extension, in close proximity to public transport interchange	55	7,953	2,500
N6 - Marston Moretaine South-Lidlington-Brogborough	515.20	100%	Large new settlement / village extension, in close proximity to public transport interchange	55	17,002	2,500
N7 - Lidlington South	322.50	100%	Large new settlement, in close proximity to public transport interchange	55	10,643	2,500
N8 - Marston Moretaine North	269.60	100%	Large new settlement / village extension, not in close proximity to public transport interchange	44	7,117	2,500
N9 - Wixams-Stewartby-Houghton Conquest	192.90	96%	Large urban infill site / extension, in close proximity to public transport interchange	55	6,366	2,000

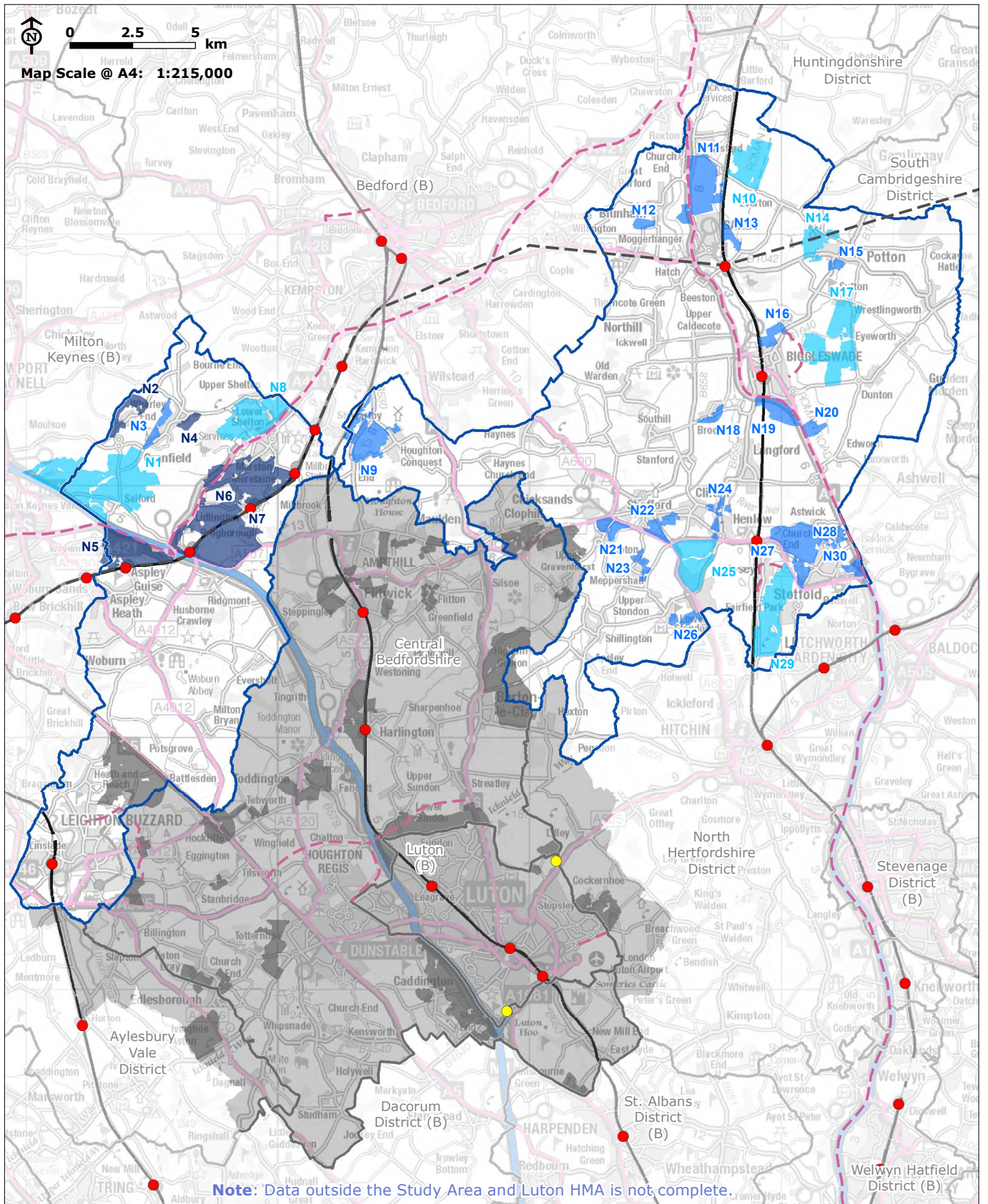
Location ID	Site area (ha)	Site area within Central Bedfordshire (%)	Assumed typology	Assumed density	Assumed total net capacity	Estimated net capacity to 2035
N10 - Sandy North East	184.40	100%	Large new settlement, not in close proximity to public transport interchange	44	4,868	2,000
N11 - Sandy North West	256.00	100%	Large urban infill site / extension, not in close proximity to public transport interchange	44	6,758	2,500
N12 - Blunham South	26.90	100%	Small village extension, not in close proximity to public transport interchange	30	484	484
N13 - Sandy East	32.80	100%	Small urban infill site / extension, in close proximity to public transport interchange	55	1,082	1,082
N14 - Pottton West	93.20	100%	Small village extension, not in close proximity to public transport interchange	30	1,678	900
N15 - Pottton South	17.50	100%	Small village extension, not in close proximity to public transport interchange	30	315	315
N16 - Biggleswade North	51.10	100%	Small urban infill site / extension, in close proximity to public transport interchange	55	1,686	1,200
N17 - Sutton-Biggleswade	324.00	100%	Large urban infill site / extension, not in close proximity to public transport interchange	44	8,554	2,000
N18 - Broom	25.30	100%	Small village extension, not in close proximity to public transport interchange	30	455	455
N19 - Biggleswade Southwest	97.10	100%	Large urban infill site / extension, in close proximity to public transport interchange	55	3,204	2,000
N20 - Biggleswade Southeast	35.90	100%	Small urban extension, not in close proximity to public transport interchange	30	646	646
N21 - Shefford West	51.80	100%	Small village extension, not in close proximity to public transport interchange	30	932	932
N22 - Shefford South-Clifton	60.90	100%	Small village extension, not in close proximity to public transport interchange	30	1,096	1,096
N23 - Meppershall	30.30	100%	Small village extension, not in close proximity to public transport interchange	30	545	545

Location ID	Site area (ha)	Site area within Central Bedfordshire (%)	Assumed typology	Assumed density	Assumed total net capacity	Estimated net capacity to 2035
N24 - Henlow-Clifton	35.40	100%	Small village extension, not in close proximity to public transport interchange	30	637	637
N25 - Henlow Camp	217.60	100%	Large village extension, not in close proximity to public transport interchange	44	5,745	2,000
N26 - Henlow Camp-Lower Stondon	36.10	100%	Small village extension, not in close proximity to public transport interchange	30	650	650
N27 - North of Church End	158.20	100%	Large new settlement / village extension, in close proximity to public transport interchange	55	5,221	2,000
N28 - Stotfold West	109.00	100%	Small village extension, not in close proximity to public transport interchange	30	1,962	1,200
N29 - Arlesey-Fairfield Park	292.80	100%	Large new settlement / village extension, not in close proximity to public transport interchange	44	7,730	2,000
N30 - Stotfold East	33.10	100%	Small village extension, not in close proximity to public transport interchange	30	596	596

Deliverability

- 3.16 The deliverability assessment covers the period to 2035, and does not take account of financial viability (which is considered separately and is based on current demand, costs and values). The overall deliverability assessment is not intended to 'rule out' any locations; those locations assessed as having "Low" overall viability are not necessarily undeliverable, and the position may change in the future as a result of further infrastructure projects, economic development activity, regeneration initiatives, and so on. Reduction in scale of the location may also increase deliverability. CBC will therefore reassess deliverability of locations through its on-going programme of policy development, if and when these parameters change.
- 3.17 We have presented the detailed results of the deliverability assessment against each of the relevant criteria and the justification for each assessment in the location assessment forms in Appendix 5. A summary of the assessment scores and the overall deliverability assessment for each location are provided in **Table 3.4**. **Figure 3.4** presents the overall deliverability assessment for each location as Low, Medium or High. The figure also shows each location in the context of key neighbouring authorities, HMAs and settlements.
- 3.18 The results illustrate that:
- Availability of land is assessed as moderately or highly likely for all of the locations on the basis that the land has been identified through the call for sites process.

- Just over half of the new settlements / large village extensions, which have an assumed requirement for a public transport interchange within 1.2km, have none currently planned and so they have been assessed as having "Low" overall deliverability. However, four new settlements / large village extensions are already within 1.2km of a public transport interchange. Three of these are assessed as having "High" overall deliverability: N5 (M1 J13), N6 (Marston Moretaine South-Lidlington-Brogborough), N7 (Lidlington South). N27 (North of Church End) is also already within 1.2km of a public transport interchange; however, as the land is moderately likely to be available, it is assessed as having "Medium" overall deliverability.
- The four large urban infill site / extensions at N9 (Wixams-Stewartby-Houghton Conquest), N11 (Sandy North West), N17 (Sutton-Biggleswade), N19 (Biggleswade Southwest) are assessed as having "Medium" or "Low" overall deliverability due to either transport infrastructure requirements or the anticipated potential future market demand for development at the assumed scale.
- Location N14 (Potton West) also has lower overall deliverability than N15 (Potton South) due to lower market demand for development at the assumed scale in that location.
- The majority of the small village and urban extension / infill sites are assessed as having "Medium" or "Low" overall deliverability as a result of infrastructure requirements or the anticipated future potential market demand for development at the assumed scale. The exceptions to this are N2 (Wharley End West) and N4 (Cranfield East), which are both assessed as having "High" overall deliverability.
- Market demand is anticipated to increase during the plan period to 2035 at five locations as a result of planned strategic physical infrastructure / regeneration initiatives / delivery of employment sites: N2 (Wharley End West), N3 (Cranfield West), N4 (Cranfield East), N11 (Sandy North West) and N13 (Sandy East).



Note: Data outside the Study Area and Luton HMA is not complete.

NORTH CENTRAL BEDFORDSHIRE
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Figure 3.4: Overall Deliverability of Locations

LUC BBP Regeneration

- Study Area
- Luton Housing Market Area
- Local Authority boundary
- Railway
- Motorway
- A Road
- Railway station
- Park & Ride

- Proposed rail improvement of significance to study
 - Proposed road scheme of significance to study
 - Potential growth location within Luton HMA
- Overall deliverability of location**
- High
 - Medium
 - Low

Source: LAs, LUC, BBP, ITP

Table 3.4: Overall deliverability assessment

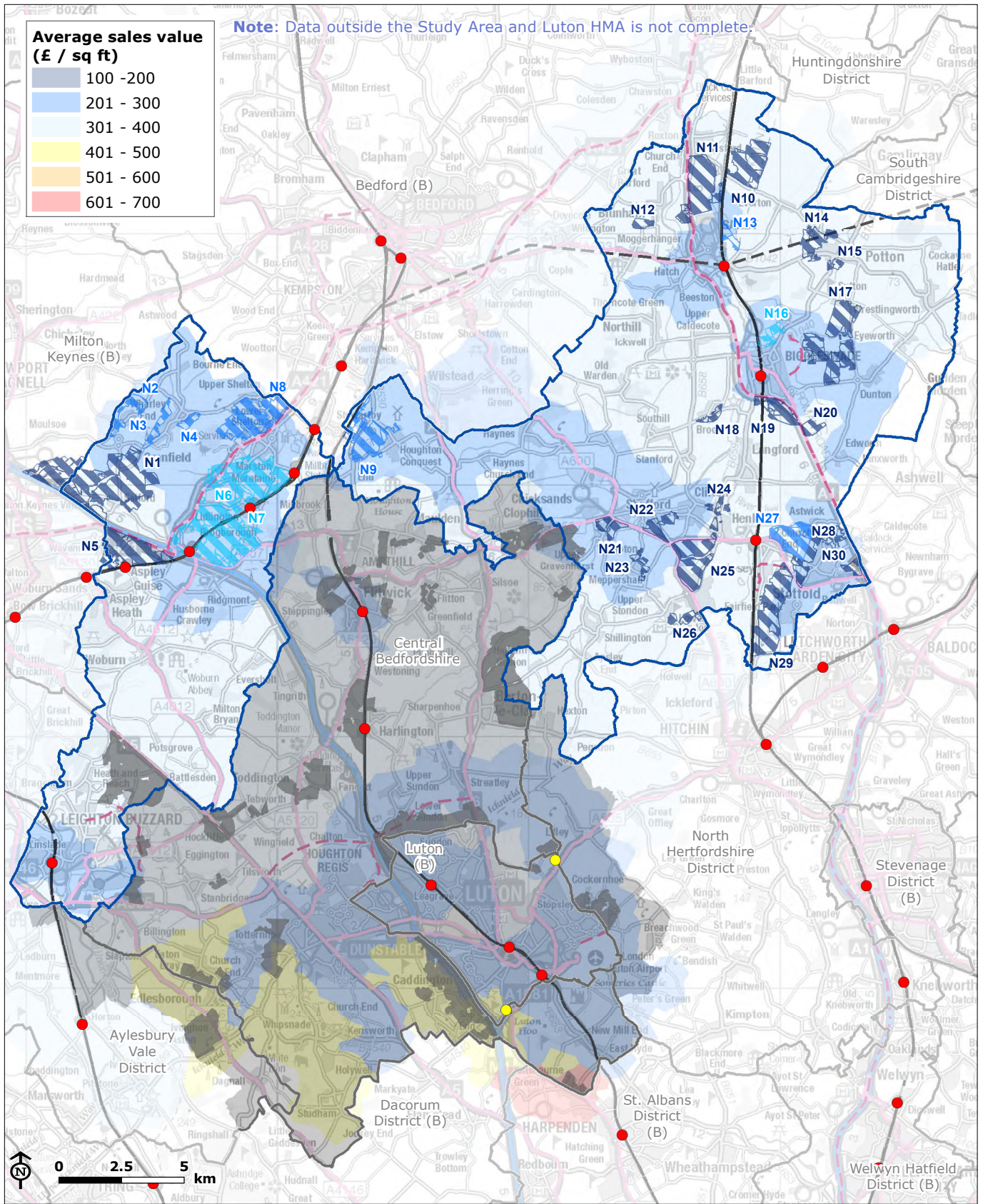
Location ID	Is the location likely to be available for development and is there a reasonable prospect of delivery of the site within the time period?	Is there a reasonable prospect that required infrastructure can be delivered within the time period?	Is there likely to be current demand for this scale of development in this location?	Is there likely to be future potential demand for this scale of development in this location, if planned regeneration / employment / infrastructure projects are delivered?	Overall deliverability assessment (High / Medium / Low)
N1 - Salford	Highly likely	Less likely	Highly likely	Highly likely (no change from current assessment)	Low
N2 - Wharley End West	Highly likely	Moderately likely	Moderately likely	Highly likely (increase from current assessment)	High
N3 - Cranfield West	Highly likely	Moderately likely	Moderately likely	Highly likely (increase from current assessment)	Medium
N4 - Cranfield East	Highly likely	Moderately likely	Moderately likely	Highly likely (increase from current assessment)	High
N5 - M1 J13	Highly likely	Highly likely	Highly likely	Highly likely (no change from current assessment)	High
N 6 - Marston Moretaine South-Lidlington-Brogborough	Highly likely	Highly likely	Highly likely	Highly likely (no change from current assessment)	High
N7 - Lidlington South	Highly likely	Highly likely	Highly likely	Highly likely (no change from current assessment)	High
N8 - Marston Moretaine North	Highly likely	Less likely	Highly likely	Highly likely (no change from current assessment)	Low
N9 - Wixams-Stewartby-Houghton Conquest	Highly likely	Moderately likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N10 - Sandy North East	Highly likely	Less likely	Moderately likely	Moderately likely (no change from current assessment)	Low
N11 - Sandy North West	Highly likely	Moderately likely	Moderately likely	Highly likely (increase from current assessment)	Medium
N12 - Blunham South	Highly likely	Moderately likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N13 - Sandy East	Highly likely	Moderately likely	Moderately likely	Highly likely (increase from current assessment)	Medium
N14 - Potton West	Moderately likely	Moderately likely	Less likely	Less likely (no change from current assessment)	Low

Location ID	Is the location likely to be available for development and is there a reasonable prospect of delivery of the site within the time period?	Is there a reasonable prospect that required strategic infrastructure can be delivered within the time period?	Is there likely to be current demand for this scale of development in this location?	Is there likely to be future potential demand for this scale of development in this location, if planned regeneration / employment / infrastructure projects are delivered?	Overall deliverability assessment (High / Medium / Low)
N15 - Potton South	Moderately likely	Moderately likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N16 - Biggleswade North	Highly likely	Highly likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N17 - Sutton-Biggleswade	Highly likely	Less likely	Moderately likely	Moderately likely (no change from current assessment)	Low
N18 - Broom	Highly likely	Moderately likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N19 - Biggleswade Southwest	Highly likely	Highly likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N20 - Biggleswade Southeast	Highly likely	Highly likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N21 - Shefford West	Highly likely	Highly likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N22 - Shefford South-Clifton	Highly likely	Highly likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N23 - Meppershall	Highly likely	Highly likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N24 - Henlow-Clifton	Highly likely	Highly likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N25 - Henlow Camp	Highly likely	Less likely	Moderately likely	Moderately likely (no change from current assessment)	Low
N26 - Henlow Camp-Lower Stondon	Highly likely	Highly likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N27 - North of Church End	Moderately likely	Highly likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N28 - Stotfold West	Highly likely	Highly likely	Moderately likely	Moderately likely (no change from current assessment)	Medium
N29 - Arlesey-Fairfield Park	Highly likely	Less likely	Moderately likely	Moderately likely (no change from current assessment)	Low

Location ID	Is the location likely to be available for development and is there a reasonable prospect of delivery of the site within the time period?	Is there a reasonable prospect that required strategic infrastructure can be delivered within the time period?	Is there likely to be current demand for this scale of development in this location?	Is there likely to be future potential demand for this scale of development in this location, if planned regeneration / employment / infrastructure projects are delivered?	Overall deliverability assessment (High / Medium / Low)
N30 - Stotfold East	Highly likely	Highly likely	Moderately likely	Moderately likely (no change from current assessment)	Medium

Viability

- 3.19 We have presented the detailed results of each of the viability assessment criteria in **Table 3.5**, alongside the overall viability assessment for each location in the final column. It should be noted that this is a high level assessment based on a largely generic set of assumptions; however, each location will have its own unique infrastructure requirements and abnormal costs that can only be fully tested on a site-specific basis. A detailed methodology and assumptions are provided at Appendix 2.
- 3.20 **Figure 3.5** presents the overall viability assessment for each location as either Low, Medium, or High. The figure also shows each location in the context of key neighbouring authorities, HMAs and settlements, and the relationship with estimated average sales values per sq ft for each postcode sector.
- 3.21 The results show that, at current costs and values, and with the assumed development mix:
- For the vast majority of the locations (20 out of 30), development at the assumed scale is likely to be viable with policy compliant affordable housing (see Appendix 2 for assumptions) and contributions to local infrastructure and abnormal costs over £30,000 per residential unit / £750,000 per net developable hectare. These sites are considered as having “High” overall viability.
 - At seven of the locations, namely N2 (Wharley End West), N3 (Cranfield West), N4 (Cranfield East), N8 (Marston Moretaine North), N9 (Wixams-Stewartby-Houghton Conquest), N13 (Sandy East) and N27 (North of Church End), the high level viability modelling suggests that development at the assumed density could only offer contributions towards local infrastructure and abnormal cost items of over £30,000 per residential unit / £750,000 per net developable hectare with lower than policy compliant levels of affordable housing provision (see Appendix 2 for assumptions). These sites are considered as having “Medium” overall viability.
 - Sites N6 (Marston Moretaine South-Lidlington-Brogborough), N7 (Lidlington South) and N16 (Biggleswade North) could not offer contributions towards local infrastructure and abnormal cost items of over £30,000 per residential unit / £750,000 per net developable hectare, even with zero affordable housing provision (see Appendix 2 for assumptions) at the assumed density and scale. These sites are assessed as “Low” in terms of their overall viability. However, we note that a reduction in density at these locations may improve viability.



NORTH CENTRAL BEDFORDSHIRE
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Figure 3.5: Overall Viability of Locations

LUC **BBP Regeneration**

Source: LAs, LUC, ITP, BBP
Map Scale @ A4: 1:215,000

Table 3.5: Viability assessment

Location ID	Assumed net capacity	Estimated net capacity to 2035	Viability of cleared and serviced development parcel	Is there a reasonable prospect that required local infrastructure and abnormal cost items can be delivered within the time period?	Overall viability assessment (High / Medium / Low)
N1 - Salford	17,487	2,500	Highly likely	Highly likely	High
N2 - Wharley End West	1,357	1,357	Moderately likely	Moderately likely	Medium
N3 - Cranfield West	855	855	Moderately likely	Moderately likely	Medium
N4 - Cranfield East	475	475	Moderately likely	Moderately likely	Medium
N5 - M1 J13	7,953	2,500	Highly likely	Highly likely	High
N 6 - Marston Moretaine South-Lidlington-Brogborough	17,002	2,500	Moderately likely	Less likely	Low
N7 - Lidlington South	10,643	2,500	Moderately likely	Less likely	Low
N8 - Marston Moretaine North	7,117	2,500	Highly likely	Moderately likely	Medium
N9 - Wixams-Stewartby-Houghton Conquest	6,366	2,000	Highly likely	Moderately likely	Medium
N10 - Sandy North East	4,868	2,000	Highly likely	Highly likely	High
N11 - Sandy North West	6,758	2,500	Highly likely	Highly likely	High
N12 - Blunham South	484	484	Highly likely	Highly likely	High
N13 - Sandy East	1,082	1,082	Highly likely	Moderately likely	Medium
N14 - Potton West	1,678	900	Highly likely	Highly likely	High
N15 - Potton South	315	315	Highly likely	Highly likely	High

Location ID	Assumed net capacity	Estimated net capacity to 2035	Viability of cleared and serviced development parcel	Is there a reasonable prospect that required local infrastructure and abnormal cost items can be delivered within the time period?	Overall viability assessment (High / Medium / Low)
N16 - Biggleswade North	1,686	1,200	Moderately likely	Less likely	Low
N17 - Sutton-Biggleswade	8,554	2,000	Highly likely	Highly likely	High
N18 - Broom	455	455	Highly likely	Highly likely	High
N19 - Biggleswade Southwest	3,204	2,000	Highly likely	Highly likely	High
N20 - Biggleswade Southeast	646	646	Highly likely	Highly likely	High
N21 - Shefford West	932	932	Highly likely	Highly likely	High
N22 - Shefford South-Clifton	1,096	1,096	Highly likely	Highly likely	High
N23 - Meppershall	545	545	Highly likely	Highly likely	High
N24 - Henlow-Clifton	637	637	Highly likely	Highly likely	High
N25 - Henlow Camp	5,745	2,000	Highly likely	Highly likely	High
N26 - Henlow Camp-Lower Stondon	650	650	Highly likely	Highly likely	High
N27 - North of Church End	5,221	2,000	Highly likely	Moderately likely	Medium
N28 - Stotfold West	1,962	1,200	Highly likely	Highly likely	High
N29 - Arlesey-Fairfield Park	7,730	2,000	Highly likely	Highly likely	High
N30 - Stotfold East	596	596	Highly likely	Highly likely	High

Transport

Baseline Investigation: Existing transport infrastructure and services

- 3.22 Central Bedfordshire lies in a prominent position in relation to the national north-south transport network, lying astride a number of key road and rail links such as the M1 and A1, and the East Coast, West Coast and Midland mainlines.

Roads

- 3.23 The M1 passes through the western portion of Central Bedfordshire, close to the settlements of Luton and Dunstable, and provides a strategic north-south link between London, the Midlands and the North. Junctions 10, 12 and 13 are located within the authority, whilst junctions 9, 11 and 14 are also in close proximity. As detailed by the Local Transport Plan 3 - Central Bedfordshire Council Transport Strategy, the M1 carries the largest proportion of traffic within Central Bedfordshire, with some sections known to handle over 100,000 vehicles per day.
- 3.24 The A1 provides an alternative north-south route from Central London to the North of England and beyond; perhaps more convenient than the M1 for residents of the eastern portion of Central Bedfordshire, close to Sandy and Biggleswade. The employment centres of Peterborough and Stevenage are located along this road, both within 30 minutes travel time of the authority boundary, whilst northern sections of London are within 1 hour. The A1 carries the second largest number of vehicles within Central Bedfordshire, with 50,000-60,000 vehicles passing along the road daily.
- 3.25 The A5 is located to the west of Central Bedfordshire, and provides an important north-south link virtually in parallel to the M1 through the authority and beyond. Critically, the A5 runs through the centre of Dunstable, which allows for links to Luton via the A505. Outside of the authority area, the A5 connects to the M1 south of Dunstable, and to Milton Keynes to the north-west. On average, 25,000 vehicles use the A5 within Central Bedfordshire per day.
- 3.26 The A421 runs through the north western portion of Central Bedfordshire, providing a key road link between the M1 and Milton Keynes to Bedford. The strategic importance of the link has increased since the upgrade to dual carriageway between the M1 Junction 13 and Bedford (completed 2010) and due to improvements to the interchange at junction 13. Subsequent to these works, evidence suggests that the A421 now carries between 25,000 and 35,000 vehicles per day within the study area.

Rail

- 3.27 The East Coast, West Coast and Midland mainlines all run through Central Bedfordshire, providing excellent north-south rail links to different parts of the authority area. Large towns such as Milton Keynes, Luton, Bedford and Peterborough are all typically within a 35 minute time envelope of railway stations within the Central Bedfordshire authority area.
- 3.28 Additionally, timetable information evidence that London is easily accessible within 60 minutes travel time using the Midland or East Coast mainline, or within 35 minutes on the West Coast mainline during peak times. This level of accessibility currently attracts rail commuters for whom the rural setting of Bedfordshire and its housing market plus the employment opportunities in London offer a good life balance.
- 3.29 There is also one railway line with significant potential traversing west to east within the study area. This railway line currently provides a stopping service between Bletchley and Bedford with intermediate railway stations serving a number of Central Bedfordshire villages such as Millbrook, Lidlington and Aspley Guise. This line is currently operated by London Midland, at an hourly service frequency.
- 3.30 Future east-west rail accessibility to various destinations is planned to improve through faster journey times between key destinations opening up opportunities to existing and future Central Bedfordshire residents in Milton Keynes, Cambridge, Oxford and potentially further afield. Improved regional integration is expected to require significant investment and be driven by long-term aspirations.

- 3.31 There is considerable potential to integrate cycling and stations while improving the existing public realm experience at rail stations through future investment programmes.

Bus services

- 3.32 **Table 3.6** below shows the frequency of standard bus services operating between a number of major settlements in Central Bedfordshire during the AM Peak (08:00-09:00). As can be seen, greatest service frequencies are currently observed from Dunstable and Houghton Regis linking to destinations such as Leighton Buzzard, Luton and Milton Keynes. Settlements such as Leighton Buzzard, Flitwick and Sandy receive lower levels of bus frequency.

Table 3.6: Frequency of bus services

Town	Destination	Service Frequency (AM Peak)
Dunstable	Luton	21 per hour
	Milton Keynes	1 per hour
	Houghton Regis	6 per hour
	Leighton Buzzard	1 per hour
Leighton Buzzard	Milton Keynes	1 per hour
	Aylesbury	2 per hour
Biggleswade	Bedford	2 per hour
	Sandy	1 per hour
	Hitchin	1 per hour
Houghton Regis	Dunstable	6 per hour
	Luton	11 per hour
Flitwick	Bedford	1 per hour
	Amphill	2 per hour
Sandy	Bedford	1 per hour
	Biggleswade	3 per hour

- 3.33 Positively influencing the public transport service frequencies seen in Dunstable and Houghton Regis is the Luton-Dunstable guided busway. Opened in 2013, the busway system provides a high frequency service between Luton and Dunstable and on to Houghton Regis. Since the opening, service reliability has improved, as the majority of the route is segregated (traffic-free), positioned away from main roads such as the A505, which leads to improved public transport operational performance to incentivise the use of more sustainable modes of transport.
- 3.34 The Luton-Dunstable Guided Busway is thought to set a valuable precedent within the authority area by means of an effective transport solution that offers a better quality and more reliable alternative to car users. This approach is thought to offer modal shift potential within Central Bedfordshire by helping increase transport capacity and improve accessibility to key destinations. There is also a key link with walking and cycling that could be promoted through this approach going forward.

National Cycle Network

- 3.35 Three National Cycle Network (NCN) routes pass through Central Bedfordshire - NCN 6, 12 and 51. NCN 6 routes to the west of Central Bedfordshire, through Houghton Regis, Dunstable and Leighton Buzzard. From the NCN 6, connections can be made to urban areas outside of the authority area, such as Milton Keynes and Luton.
- 3.36 NCN 12 routes to the east of Central Bedfordshire. Although the route is yet to be completed, the settlements of Stotfold, Henlow, Biggleswade and Sandy have sections of the network running through them. The southern portion of NCN 12, from Stotfold and Henlow allows access to the south to Letchworth Garden City and Stevenage, whilst the northern section (from Sandy) provides links to Bedford, via NCN 51, and further north to St Neots and beyond.

- 3.37 NCN 51 is located to the north of Central Bedfordshire, and links Bedford and Milton Keynes via Salford, Cranfield and Marston Moretaine. To the west, NCN 51 connects into Milton Keynes' extensive redway network, providing excellent cycle access and a real transport alternative around the town. Travelling east, the route connects to the Bedford local cycle network.
- 3.38 While the cycle network linking the major towns which flank the authority is strong - many of which pass through the authority area in some capacity - there is a noticeable lack of cycle routes within the central part of Central Bedfordshire.

Local Cycle Networks

- 3.39 Currently, the only settlement to have an extensive local cycle network within Central Bedfordshire is Leighton Buzzard. This provides links in all directions around the town, and to amenities such as the railway station, as well as connecting to NCN 6. A number of local routes branch off from the NCN, allowing for access to outlying villages and towns.
- 3.40 In addition, there is a segregated cycle route which runs alongside the Luton-Dunstable guided busway providing an efficient link between the two towns.

Walking Network

- 3.41 As detailed by the Local Transport Plan 3 - Central Bedfordshire Council Transport Strategy, Central Bedfordshire has a wide network of walking routes in both urban and rural areas, with approximately 1,300 km of public Rights of Way stretching throughout the authority area.

Key Local Travel Trends

Car Ownership

- 3.42 Central Bedfordshire currently has high levels of car ownership compared to the national average, as detailed in **Table 3.7** below.

Table 3.7: Car ownership levels

Car Ownership	CBC	Regional Average	National Average
No cars or vans	13%	19%	26%
One car or van	40%	43%	42%
Two cars or vans	35%	29%	25%
Three or more cars or vans	12%	10%	7%

Source: 2011 Census data

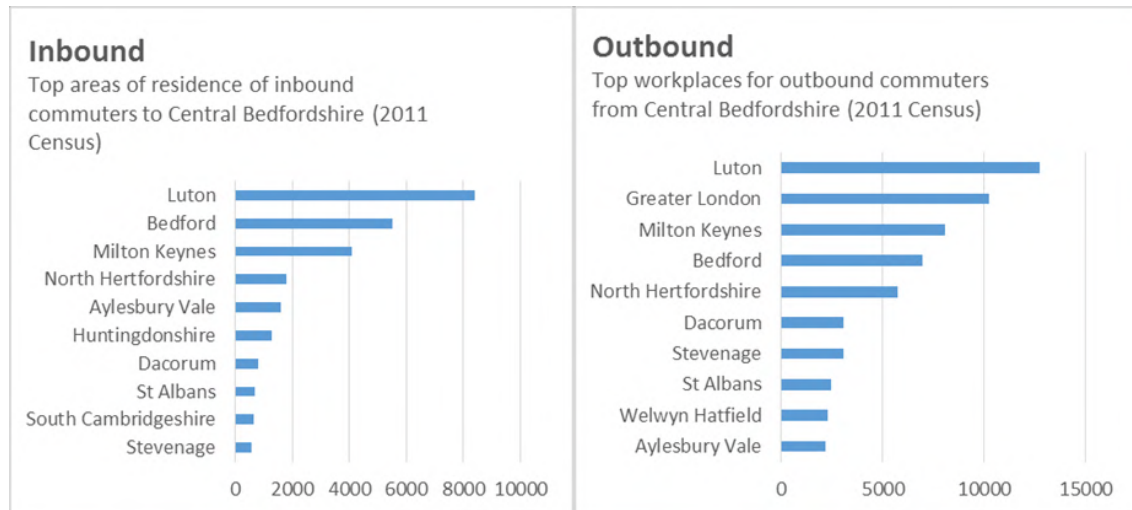
- 3.43 The number of households without a car in the authority area is significantly lower (13%) than both the regional (19%) and national (26%) averages, underlining car dependency within the authority. Similarly, the number of households with two cars is 10% higher than the national average and 6% higher than the regional average. Approximately 157,000 cars or vans are owned by Central Bedfordshire households, equating to a ratio of 1.5 cars / vans per household.
- 3.44 The predominantly rural nature of Central Bedfordshire is undoubtedly a major factor in the high levels of car ownership observed. Rural communities, such as those found in Central Bedfordshire, are less able to sustain commercially viable public transport networks, and as such fall foul of low or no public transport provision, leading to low public transport uptake and detrimentally high car usage.
- 3.45 This consideration is critical in defining the future of transport and land use policies in Central Bedfordshire as excessive reliance on the car will be unsustainable in the medium and long terms.

- 3.46 Levels of affluence and / or deprivation are other key indicators, with high affluence and low levels of deprivation corresponding with higher than average car ownership, and vice versa.
- 3.47 As highlighted previously, it is important to recognise that the CBC authority area is well connected by strategic roads, reflecting pockets of high car ownership close to the A1 and M1 corridors. Further, the location of the authority area means that residents can commute to a number of large urban areas outside of the authority without having to relocate. London, Milton Keynes, Bedford, Luton and Cambridge are all within comfortable commutes by car from most if not all areas of the authority, while the West Midlands is not beyond commuter distance either.
- 3.48 This means that Central Bedfordshire has historically provided for a stable long-term location in which to reside, providing access to a versatile array of employment locations that are greatly accessible by car, enabling residents to change jobs without the need to relocate. Nonetheless, it is recognised that new housing development and cuts to public transport services will inevitably result in increasing demands for the entire transport network. Going forward, CBC transport and land use policies will need to encourage and incentivise the use of more sustainable modes of transport to help tackle increasing congestions levels; consider the implementation of complementary travel demand management measures; and decisively promote opportunities to encourage modal shift.
- 3.49 Accordingly, the promotion of development in areas that have good links to existing public transport networks, which take advantage of existing and planned new sustainable transport infrastructure, or which - through scale - have the capacity to generate new links for themselves, are thought to help reduce overall car dependency within the study area. This should be accompanied by consistent and suitable travel demand management measures.

Commuting Trends

- 3.50 Due to the high numbers of jobs located outside of Central Bedfordshire, linked to the rurality of the authority, a significant number of residents commute outside of the authority area on a daily basis, as illustrated in Figure 3.6.
- 3.51 Analysis of 2011 Census data regarding commuting patterns reveals that 39% of Central Bedfordshire's workforce (32,535 people daily) commuted into the district in 2011, with the highest sources of commuters coming from Luton (8,401), Bedford (5,514) and Milton Keynes (4,100). By contrast, 66,440 residents (52% of the working population) commute to areas outside of the authority area each day - more than double the number of inbound commuters (32,535). Central Bedfordshire is the largest source of inbound commuters for all of the aforementioned authorities, as well as North Hertfordshire.
- 3.52 Meanwhile, the largest proportions of outbound commuters travel to work in Luton (12,780), followed by Milton Keynes (8,061), Bedford (6,986) and North Hertfordshire (5,726). Additionally, a large number of Central Bedfordshire residents commute to various locations within Greater London on a daily basis (a total of 10,276).
- 3.53 Figure 3.6 provides an illustrative comparison of Central Bedfordshire's inbound and outbound commuting trends.

Figure 3.6 Inbound & outbound commuting – Central Bedfordshire



Source: 2011 Census data

Method of Travel to Work

3.54 Unsurprisingly, the 2011 Census shows that the private car is the dominant mode of commuting transport, accounting for 75% of all outbound commuter trips originating from the authority, comparing to 67% for the East of England and 62% for England nationally. Of these motorists, 70% are drivers and 5% are passengers in vehicles driven by somebody else. Public transport modes account for 9% of outbound commuter trips, with active travel (walking and cycling) accounting for 10%. A regional and national comparison of mode share is presented in **Table 3.8** below:

Table 3.8: Mode share comparison

Mode of travel	CBC	East of England	England (whole)
Car (as a driver)	69.7%	61.7%	57.0%
Car (as a passenger)	4.6%	5.0%	5.0%
Bus	2.0%	3.7%	7.5%
Train	6.4%	7.2%	5.3%
Walking	8.1%	10.1%	10.7%
Cycling	1.6%	3.5%	3.0%
Underground, Metro or Light Rail	0.2%	1.2%	4.1%
Motorcycle	0.6%	0.8%	0.8%
Taxi	0.2%	0.5%	0.5%
Other	0.5%	0.6%	0.6%
None (work from home)	6.0%	5.7%	5.4%

Source: 2011 Census data

Transport Analysis of Potential Growth Locations

- 3.55 The first stage of the transport analysis consisted of an assessment using the following indicators in relation to each potential growth location:
- Key Commuter Travel Mode Split: Public Transport;
 - Key Commuter Travel Mode Split: Active Travel;
 - Public Transport Accessibility;
 - Road Accessibility;
 - Indicative Traffic Conditions;
 - Personal Injury Collisions; and
 - Main Train Station Car Park Facilities.
- 3.56 Each indicator was graded using a three tiered scale (High, Medium, Low) based on defined thresholds and presented for existing conditions and assumed future conditions. It should be noted that the following assessment indicators remained unchanged for each of the two conditions (i.e. existing and future conditions):
- Key Commuter Travel Mode Split: Public Transport;
 - Key Commuter Travel Mode Split: Active Travel;
 - Personal Injury Collisions; and
 - Main Train Station Car Park Facilities.
- 3.57 Whilst the following transport analysis results focus on individual growth option performance, any future decisions should be fully supported by the inclusion of a wider range of factors and the development of detailed transport testing of the individual growth options and cumulative impacts.
- 3.58 It is important to highlight that transport sustainability has not been benchmarked against best practice locations in terms of transport sustainability within or outside Bedfordshire. Transport input simply provides a comparison between all the 30 potential growth locations.
- 3.59 **Table 3.9** and **Table 3.10** show the results for each indicator by potential growth location for existing and assumed future conditions respectively.

Table 3.9: Key Transport Indicator Results – Existing Scenario

Key Commuter Travel Mode Split		Public Transport Accessibility	Road Accessibility	Indicative Existing Traffic Conditions (Length of Road by Road Type) Circle from Centre of Growth Option (Radius = 5,000m)	Personal Injury Collisions Perimeter 1,000m	Mainline Train Station Car Park Facilities	
ID	Public Transport	Active Travel	Estimated No. of Jobs within 60 mins	Estimated No. of Jobs within 30 mins	≥ 30 % speed reduction	Indicative Number of Collisions per Ha	Existing Car Park Capacity
			Existing Public Transport	Road Infrastructure	Motorway & A Roads	Serious & Fatal	
N1	Medium	High	Medium	High	Low	High	High
N2	Low	High	High	High	Medium	Medium	High
N3	Medium	Medium	High	High	Medium	Medium	High
N4	Medium	Medium	High	High	High	Medium	High
N5	Medium	Medium	Medium	High	Low	Medium	High
N6	Medium	Medium	Medium	High	Medium	Medium	High
N7	Medium	Medium	Low	Medium	Medium	High	High
N8	Medium	Low	High	Medium	High	Medium	High
N9	Medium	Medium	High	Medium	High	High	High
N10	Medium	High	Low	Low	High	High	Medium
N11	Medium	High	Low	Medium	High	High	Medium
N12	Medium	Medium	Low	Medium	High	Low	Medium
N13	High	High	Medium	Medium	High	Medium	Medium
N14	Medium	Medium	Low	Medium	High	Medium	Medium
N15	Medium	Medium	Low	Medium	High	Low	Medium
N16	Medium	High	Medium	Medium	High	Low	Medium
N17	Medium	Medium	Low	Medium	High	High	Medium
N18	Medium	Medium	Low	High	High	Medium	Medium
N19	Medium	High	Medium	Medium	High	Medium	Medium
N20	Medium	Medium	Low	Medium	High	Medium	Medium
N21	Medium	High	Medium	High	High	Medium	Low
N22	Medium	Medium	Medium	High	High	Medium	Low
N23	Medium	Medium	Low	High	High	Medium	Low

ID	Key Commuter Travel Mode Split		Public Transport Accessibility	Road Accessibility	Indicative Existing Traffic Conditions (Length of Road by Road Type) Circle from Centre of Growth Option (Radius = 5,000m)	Personal Injury Collisions Perimeter 1,000m	Mainline Train Station Car Park Facilities
	Public Transport	Active Travel	Estimated No. of Jobs within 60 mins	Estimated No. of Jobs within 30 mins	≥ 30 % speed reduction	Indicative Number of Collisions per Ha	Existing Car Park Capacity
			Existing Public Transport	Road Infrastructure	Motorway & A Roads	Serious & Fatal	
N24	Medium	Medium	Medium	Medium	High	Low	Low
N25	Medium	High	Medium	Medium	High	High	Low
N26	Medium	Medium	Medium	Medium	High	Medium	Low
N27	Medium	Medium	Medium	Medium	High	High	Low
N28	Medium	Medium	Low	Medium	High	Medium	Low
N29	High	Medium	Medium	Medium	Medium	High	Low
N30	Medium	Medium	Low	Medium	High	Low	Low
	0%-5%	0%-5%	0 - 60,000	0 - 75,000	≥ 12,000	≥ 0.15	0 - 100
	5%-10%	5%-10%	60,000 - 120,000	75,000 - 215,000	6,000 - 12,000	0.05 - 0.15	100 - 200
	≥ 10%	≥ 10%	≥ 120,000	≥ 215,000	0 - 6,000	0.00 - 0.05	≥ 200

Table 3.10: Key transport Indicator Results – Future Scenario

	Key Commuter Travel Mode Split		Public Transport Accessibility	Road Accessibility	Indicative Future Traffic Conditions (Length of Road by Road Type) Circle from Centre of Growth Option (Radius = 5,000m)	Personal Injury Collisions Perimeter 1,000m	Mainline Train Station Car Park Facilities
ID	Public Transport	Active Travel	Estimated No. of Jobs within 60 mins	Estimated No. of Jobs within 30 mins	≥ 30 % speed reduction	Indicative Number of Collisions per Ha	Existing Car Park Capacity
			Future PT Investment	Future Road Infrastructure	Motorway & A Roads	Serious & Fatal	
N1	Medium	High	Medium	High	Low	High	High
N2	Low	High	High	High	High	Medium	High
N3	Medium	Medium	High	High	High	Medium	High
N4	Medium	Medium	High	High	High	Medium	High
N5	Medium	Medium	Medium	High	Medium	Medium	High
N6	Medium	Medium	Medium	High	High	Medium	High
N7	Medium	Medium	Medium	High	High	High	High
N8	Medium	Low	High	High	High	Medium	High
N9	Medium	Medium	High	High	High	High	High
N10	Medium	High	Low	Low	High	High	Medium
N11	Medium	High	Low	Medium	High	High	Medium
N12	Medium	Medium	Low	High	High	Low	Medium
N13	High	High	Medium	High	High	Medium	Medium
N14	Medium	Medium	Low	High	High	Medium	Medium
N15	Medium	Medium	Low	High	High	Low	Medium
N16	Medium	High	Medium	High	High	Low	Medium
N17	Medium	Medium	Low	Medium	High	High	Medium
N18	Medium	Medium	Low	High	High	Medium	Medium
N19	Medium	High	Medium	High	High	Medium	Medium
N20	Medium	Medium	Low	Medium	High	Medium	Medium
N21	Medium	High	Medium	High	High	Medium	Low
N22	Medium	Medium	Medium	High	High	Medium	Low
N23	Medium	Medium	Low	High	High	Medium	Low
N24	Medium	Medium	Medium	High	High	Low	Low

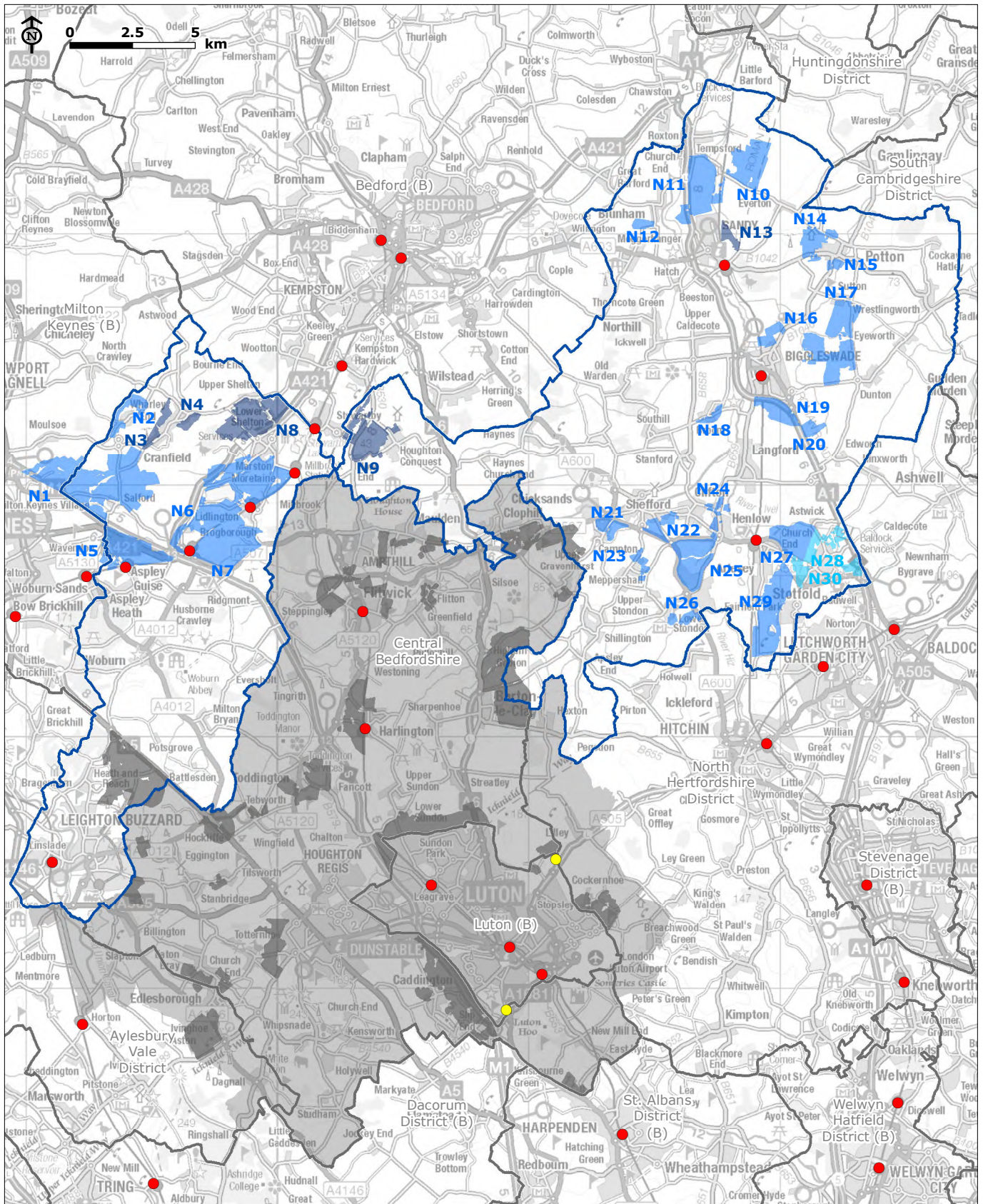
	Key Commuter Travel Mode Split		Public Transport Accessibility	Road Accessibility	Indicative Future Traffic Conditions (Length of Road by Road Type) Circle from Centre of Growth	Personal Injury Collisions Perimeter 1,000m	Mainline Train Station Car Park Facilities
	Medium	High					
N25	Medium	High	Medium	High	High	High	Low
N26	Medium	Medium	Medium	Medium	High	Medium	Low
N27	Medium	Medium	Medium	Medium	High	High	Low
N28	Medium	Medium	Low	High	High	Medium	Low
N29	High	Medium	Medium	Medium	High	High	Low
N30	Medium	Medium	Low	Medium	High	Low	Low
	0%-5%	0%-5%	0 - 60,000	0 - 75,000	≥ 12,000	≥ 0.15	0 - 100
	5%-10%	5%-10%	60,000 - 120,000	75,000 - 215,000	6,000 - 12,000	0.05 - 0.15	100 - 200
	≥ 10%	≥ 10%	≥ 120,000	≥ 215,000	0 - 6,000	0.00 - 0.05	≥ 200

Simplified Multi-Criteria Analysis

- 3.60 A simplified multi-criteria analysis was applied in order to provide an overall comparison between the potential growth locations. How much weight is given to each of the indicators when considering transport accessibility as a whole within the multi-criteria analysis is both subjective and open to variation depending on the preference of the individual(s) using the data.
- 3.61 Notwithstanding the above, through discussions with CBC and the application of professional judgement by ITP, a process of weighting has been applied to the different indicators to provide a combined overall set of transport results. The weightings applied sought to reflect the relative importance placed on sustainable transport, in particular public transport. Whilst assigned weights support public transport indicators (i.e. mode split PT, indicative public transport accessibility and main station parking capacity) to respond to the context of national and Central Bedfordshire policy objectives, additional checks were also carried out to underline possible variations that might result from using road-led and balanced approaches. The detailed methodology presented in Appendix 4 should be referred to for further information and detail.
- 3.62 **Table 3.11** and **Table 3.12** below show these combined results for both the existing and future scenario respectively. Consistent with other results within this study, these results have been graded Low, Medium or High. The results have been mapped and are displayed in **Figure 3.7** and **Figure 3.8**.

Table 3.11: Overall Accessibility - Existing Scenario

ID	Location Name	Overall Accessibility
N1	Salford	Medium
N2	Wharley End West	Medium
N3	Cranfield West	High
N4	Cranfield East	High
N5	M1 J13	Medium
N6	Marston Moretaine South-Lidlington-Brogborough	Medium
N7	Lidlington South	Medium
N8	Marston Moretaine North	High
N9	Wixams-Stewartby-Houghton Conquest	High
N10	Sandy North East	Medium
N11	Sandy North West	Medium
N12	Blunham South	Medium
N13	Sandy East	High
N14	Potton West	Medium
N15	Potton South	Medium
N16	Biggleswade North	Medium
N17	Sutton-Biggleswade	Medium
N18	Broom	Medium
N19	Biggleswade South	Medium
N20	South of Biggleswade	Medium
N21	Shefford West	Medium
N22	Shefford South-Clifton	Medium
N23	Meppershall	Medium
N24	Henlow-Clifton	Medium
N25	Henlow Airfield	Medium
N26	Henlow Camp-Lower Stondon	Medium
N27	North of Church End	Medium
N28	Stotfold West	Low
N29	Arlesey-Fairfield Park	Medium
N30	Stotfold East	Low



- Study Area
- Luton Housing Market Area
- Local Authority boundary
- Railway station
- Park & Ride
- Potential growth location within Luton HMA
- Accessibility of locations**
- High
- Medium
- Low

NORTH CENTRAL BEDFORDSHIRE
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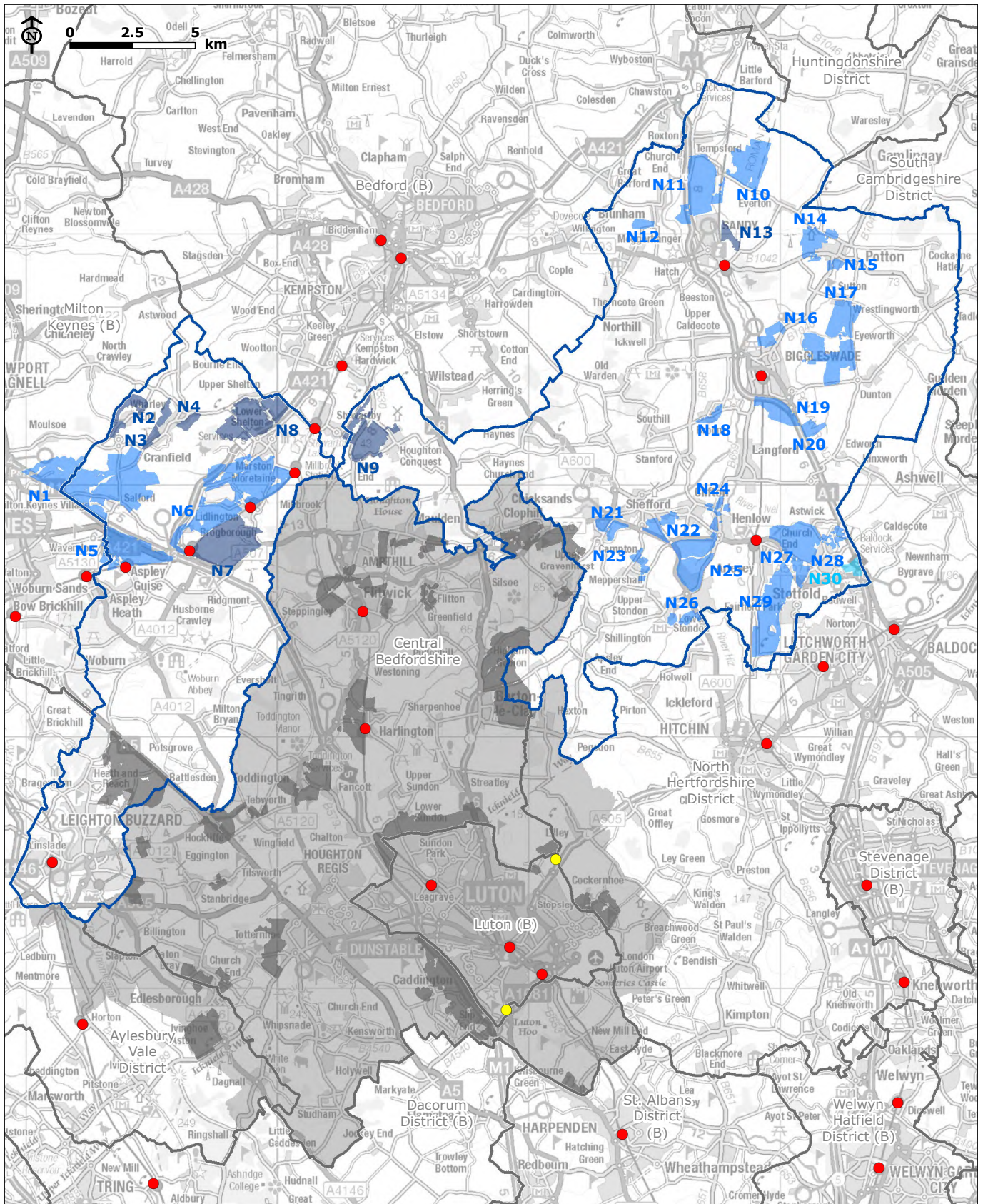
Figure 3.7: Overall Accessibility - Current Scenario



Map Scale @ A4: 1:215,000
Source: LAs, 2011 Census Employment Data, Traffic Master Speed Data, Crashmap, ITP, LUC

Table 3.12: Overall Accessibility - Future Scenario

ID	Location Name	Overall Accessibility
N1	Salford	Medium
N2	Wharley End West	High
N3	Cranfield West	High
N4	Cranfield East	High
N5	M1 J13	Medium
N6	Marston Moretaine South-Lidlington-Brogborough	Medium
N7	Lidlington South	High
N8	Marston Moretaine North	High
N9	Wixams-Stewartby-Houghton Conquest	High
N10	Sandy North East	Medium
N11	Sandy North West	Medium
N12	Blunham South	Medium
N13	Sandy East	High
N14	Potton West	Medium
N15	Potton South	Medium
N16	Biggleswade North	Medium
N17	Sutton-Biggleswade	Medium
N18	Broom	Medium
N19	Biggleswade South	Medium
N20	South of Biggleswade	Medium
N21	Shefford West	Medium
N22	Shefford South-Clifton	Medium
N23	Meppershall	Medium
N24	Henlow-Clifton	Medium
N25	Henlow Airfield	Medium
N26	Henlow Camp-Lower Stondon	Medium
N27	North of Church End	Medium
N28	Stotfold West	Medium
N29	Arlesey-Fairfield Park	Medium
N30	Stotfold East	Low



NORTH CENTRAL BEDFORDSHIRE
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Figure 3.8: Overall Accessibility - Future Scenario



Map Scale @ A4: 1:215,000

Source: LAs, 2011 Census Employment Data, Traffic Master Speed Data, Crashmap, ITP, LUC

Transport Analysis Key Findings

Existing transport infrastructure

- 3.63 Potential growth option locations N1 to N8 are located in proximity to the M1 and lie between Milton Keynes and Bedford. Three of these locations (N3, N4 and N8) were found to perform well in comparison to most of the other options. Nonetheless, journey-to-work modal split data suggests relatively low shares for sustainable modes of transport, inferring that road accessibility is likely to be affected by capacity constraints related to minor roads that serve the area. This consideration might have noticeable implications in terms of induced traffic in the future.
- 3.64 North-western growth option locations are located near key employment centres. This was found to enhance their accessibility credentials.
- 3.65 Similarly, growth option location N9 relies largely on access routes via the A6 with generally challenging traffic conditions to the north in Bedford and near Clophill.
- 3.66 To the east of the study area, strategic road access for growth option locations N10 to N30 is largely governed by the A1. Main access routes such as the A507, Hitchin Road and Bedford Road near growth option locations N21 to N30 are observed to experience difficulties in terms of traffic conditions. Additionally, road accessibility is likely to be affected by challenging traffic conditions in North Hertfordshire.

Planned transport infrastructure

- 3.67 As detailed in the transport infrastructure schedule (Appendix 3) various transport infrastructure investment schemes are planned to be delivered by 2035.
- 3.68 In terms of planned public transport schemes, the East West Rail scheme (Central Section) is thought to offer a valuable opportunity to help unlock development around the western side of the study area near Ridgmont Station (e.g. growth option locations N2 and N7) and particularly the north-eastern side of the study area close to Sandy. The latter area is likely to benefit growth option locations N10 and N11, subject to the location of the future EWR interchange with the East Coast Mainline.
- 3.69 Although our project team applied conservative assumptions based on existing project information, which might not reflect long-term aspirations of the EWR scheme promoters, the results (i.e. estimated number of jobs within 60 minutes) obtained in our accessibility analysis reveal a number of positive changes. This was noticeable for growth option locations N14 and N15 and it is likely to be linked to existing bus services and the future connection with the central section of the EWR scheme.
- 3.70 While evidence suggests that other public transport schemes are expected to bring benefits in relation to capacity improvements and more reliable journeys, for the purpose of our transport input, improvements in public transport accessibility are less obvious, as defined by the public transport indicators.
- 3.71 Improvements to main train station car parking capacity (to facilitate park and ride if applicable) and cycle parking facilities are also likely to benefit potential growth option locations, particularly those close to the East Coast Mainline.
- 3.72 Regarding road accessibility, our findings were subject to a greater level of assumptions for future conditions. Overall, the development of the Oxford to Cambridge Expressway and the A1 East of England Improvements schemes are the most likely interventions to influence road accessibility. Careful examination of generated traffic implications and cumulative impacts in the long-term is required.

Potential Transport Opportunities

- 3.73 The performance of each of the potential growth locations in terms of overall accessibility is based on committed transport schemes and specific assumptions. It is however important to note that

performance of individual sites can potentially be significantly improved as a result of sustainable transport interventions that could derive from combined developer contributions.

- 3.74 At this stage it is impossible, without detailed transport assessment and a much more detailed understanding of viability, to say to what extent transport schemes could be brought forward. Nonetheless it is possible based on the existing characteristics of a site to identify potential interventions that may allow a more balanced spatial strategy to be implemented.
- 3.75 From a sustainable transport perspective, it is critical to develop a spatial strategy that is further supported by detailed investigations and testing using the strategic transport model and potential growth option location clusters, enabling the authority to target and combine potential developer contributions, as deemed necessary. Clusters should respond to CBC's vision, key priorities and strategic objectives while supporting specific sustainable transport aspirations.
- 3.76 It is recognised that existing / new public transport provisions in isolation are unlikely to deliver more sustainable transport network operations, particularly in the rural context of Central Bedfordshire. Improvements need to be accompanied by a coherent travel demand management strategy and walking and cycling interventions to be able to positively influence modal split. It should be the aim of all developments to ensure that for short trips, walking and cycling are the default modes of choice.
- 3.77 The existing dispersed settlement pattern within the authority area makes local public transport upgrades challenging. However, and subject to other factors, the implementation of policies that focus development around stations along the Midland and East Coast Mainlines, where significant transport investment is taking place or on major potential growth locations, could help authorities promote, for example, more attractive and frequent bus services through the implementation of transport solutions such as the Luton-Dunstable Guided Busway.
- 3.78 It should be noted that testing on the strategic transport model should provide the basis to ensure the transport network and services could support the expected levels of growth. Due to the high-level nature of this study, individual options or potential clusters were not tested.
- 3.79 The CBC spatial strategy must be fully aligned with housing needs and the capability of each growth option location to accommodate specific levels of housing. Similarly, as previously implied, there are other significant factors that should be taken into consideration to finalise the strategy, which are external to transport, including other critical infrastructure requirements, deprivation and potential areas of intensification.
- 3.80 **Table 3.13** provides a summary of potential transport interventions that might promote and strengthen the relative performance of the different potential growth locations. Further site by site detail is included in the location assessment forms in Appendix 5.
- 3.81 The interventions are listed and explained below:

Public Transport

- PT1: Provision of a new public transport interchange (rail/bus) to improve connectivity north of Sandy. Opportunities to link into the EWR scheme. Possible relocation of / or improvements to Sandy station.
- PT2: Provision of a high-quality link service (i.e. a bus service that provides sufficient convenience, frequency, journey time and reliability, to be attractive to users) between North Hertfordshire and Luton.
- PT3: Improved connectivity with North Hertfordshire, Stevenage, Welwyn and Hatfield. Opportunities linked to the A1 improvements scheme.
- PT4: Improved bus connectivity with North Hertfordshire (Hitchin and Stevenage).
- PT5: Improved bus connectivity along the A6.
- PT6: Improved bus connectivity between Bedford and Milton Keynes via Cranfield.
- PT7: Enhanced bus priority measures to improve public transport reliability.

Park & Ride (Car park provision at train stations)

- P1: Parking capacity enhancements at Biggleswade and Arlesey.
- P2: Parking capacity enhancements at Sandy.

Cycling⁸

- C1: Provision of a cycle connection to the National Cycle Route 51.
- C2: Provision of a cycle connection to the National Cycle Route 12.
- C3: Enhancement of cycling connectivity with the National Cycle Route 12 and additional cycle parking capacity at key transport interchange (i.e. Arlesey).
- C4: Cycle infrastructure improvements to help complete National Cycle Route 12.
- C5: Improved cycle parking facilities at existing and future public transport interchanges.
- C6: Improved local cycle network routes.

⁸ Cycle infrastructure improvements might be segregated routes, on-road cycle lanes or priority measures. Linking in to existing cycle routes enables networks to be created, and can therefore improve connectivity.

Table 3.13: Potential transport interventions

Growth Option Reference	Public Transport		Park & Ride Facilities	Cycling				
N1	PT6			C1	C5			
N2								
N3								
N4								
N5								
N6								
N7								
N8								
N9	PT5							
N10	PT1	PT3	P2	C2	C5			
N11								
N12								
N13					C5	C6		
N14		PT4						
N15								
N16	PT7				C4	C5		
N17	PT7							
N18	PT7							
N19	PT7						C5	
N20	PT7							
N21			P1	C3				
N22								
N23								
N24	PT2	PT4					C5	
N25								
N26								
N27	PT2	PT4					C5	
N28								
N29								C5
N30								

3.82 The high-level transport opportunities that would be expected to improve the sustainable transport credentials and relative performance of individual potential growth locations are discussed below.

N1

- Improved bus connectivity and service quality between Bedford and Milton Keynes via Cranfield to facilitate sustainable trips to key destinations. This would seek to offer a high-quality alternative to private transport and enhance transport opportunities for local communities. This is supported by traffic distribution evidence (i.e. car / van trips), which highlights Milton Keynes and Bedford as key employment destinations. Integration with existing and new key interchange hubs, including the future Ridgmont Interchange, would also be critical to support inter-regional trips.
- Provide a cycle connection to the National Cycle Route 51, linking Bedford and Milton Keynes. This offers a valuable opportunity to facilitate access to an extensive cycle network available in Milton Keynes. Improved cycle parking facilities at the future Ridgmont interchange. High-quality cycle parking facilities as part of development features.

N2

- As detailed for growth location N1.

- Improved public transport capacity along the M1 / A507 to facilitate trips to the south east of the study area including major destinations in Dacorum and Luton. This might include the implementation of high-quality bus services connecting surrounding areas with the Midland Mainline or long distance road-based public transport services.

N3

- As detailed for growth location N2.

N4

- As detailed for growth location N2.

N5

- Improved public transport capacity to facilitate trips to the north and the south east of the study area including major destinations in Dacorum and Luton. Integration with existing and new key interchange hubs, including the future Ridgmont Interchange, would also be critical to support inter-regional trips.
- Provide a cycle connection to the National Cycle Route 51, linking Bedford and Milton Keynes. This offers a valuable opportunity to facilitate access to an extensive cycle network available in Milton Keynes. Improved cycle parking facilities at the future Ridgmont interchange. High-quality cycle parking facilities as part of development features.

N6

- As detailed for growth location N2.

N7

- As detailed for growth location N2.

N8

- Improved bus connectivity and service quality between Bedford and Milton Keynes via Cranfield and along the A507 to facilitate sustainable trips to key destinations. This would seek to offer a high-quality alternative to private transport and enhance transport opportunities for local communities. This is supported by traffic distribution evidence (i.e. car / van trips), which highlights Milton Keynes, Bedford, Luton and North Hertfordshire as key employment destinations. Integration with existing and new key interchange hubs, including Flitwick Station and the future Ridgmont Interchange would also be critical to support inter-regional trips.
- Introduce cycle infrastructure to connect the growth location to the National Cycle Route 51, linking Bedford and Milton Keynes. High-quality cycle parking facilities as part of development features.

N9

- Improved access to the Midland Mainline to facilitate trips towards key destinations including Dacorum and Bedford.
- Provide a cycle connection to the National Cycle Route 51, linking Bedford and Milton Keynes. Enhanced local cycle network routes. High-quality cycle parking facilities as part of development features.

N10

- Provision of a new public transport interchange to improve connectivity north of Sandy by relocating / modernising Sandy Station and car park capacity enhancements to facilitate park and ride. This would offer a modern transport interchange between the future EWR and the East Coast Mainline, improved transport opportunities for the North-Eastern part of Central Bedfordshire through improving the physical accessibility of the transport system and provide access to services to major destinations such as Cambridge, Milton Keynes and Oxford. This

opportunity coupled with the Oxford to Cambridge Expressway could help balance capacity and demands for road travel.

- Improved bus connectivity with North Hertfordshire, Stevenage, Welwyn and Hatfield. Opportunities linked to the A1 improvements scheme.
- Promote cycle network connections at a local level and seamless integration with the National Cycle Route 12 connecting key destinations in Hertfordshire and Bedford. Improved cycle parking facilities at existing and future public transport interchanges to promote strategic and more sustainable modal transfers. High-quality cycle parking facilities as part of development features.

N11

- As detailed for growth location N10.

N12

- As detailed for growth location N10.

N13

- Car parking capacity enhancements at Sandy to facilitate transfers into public transport. Improved cycle parking facilities at existing / future public transport interchanges to promote active travel. Improved local cycle network routes.
- High-quality cycle parking facilities as part of development features.

N14

- Improved bus connectivity with North Hertfordshire (Hitchin and Stevenage).
- Car park capacity enhancements at Sandy to promote strategic interchange for long distance trips and promotion of high-quality cycle parking facilities as part of development features.

N15

- Improved bus connectivity with North Hertfordshire. This is supported by traffic distribution evidence (i.e. car / van trips), which highlights Hitchin and Stevenage as key employment destinations.
- Car park capacity enhancements at existing / new Sandy interchange. Promotion of high-quality cycle parking facilities as part of development features.
- Cycle infrastructure improvements linked to National Cycle Route 12 and local cycle routes.

N16

- Enhanced bus priority measures to improve public transport reliability to key destinations including those in North Hertfordshire, Bedford and Luton.
- Cycle infrastructure improvements linked to National Cycle Route 12. Improved cycle parking facilities at existing and future public transport interchanges. Promotion of high-quality cycle parking facilities as part of development features.

N17

- As described for growth location N16.

N18

- As described for growth location N16.

N19

- As described for growth location N16.

N20

- As described for growth location N16.

N21

- Car park capacity enhancements at Biggleswade and Arlesey. Additional cycle parking capacity at Arlesey interchange.
- Provide / enhance connections to National Cycle Route 12 linking North Hertfordshire and Bedford. Cycle infrastructure improvements to help complete National Cycle Route 12.
- Promotion of high-quality cycle parking facilities as part of development features.

N22

- As described for growth location N21.

N23

- As described for growth location N21.

N24

- Provide a high-quality link service between North Hertfordshire and potentially Luton. This is supported by traffic distribution evidence (i.e. car / van trips), which highlights North Hertfordshire, Welwyn Hatfield and Stevenage, as key employment destinations.
- Car park capacity enhancements at Biggleswade and Arlesey. Additional cycle parking capacity at Arlesey interchange.
- Provide / enhance connections to National Cycle Route 12 linking North Hertfordshire and Bedford. Cycle infrastructure improvements to help complete National Cycle Route 12.
- Promotion of high-quality cycle parking facilities as part of development features.

N25

- As described for growth location N24.

N26

- Car park capacity enhancements at Biggleswade and Arlesey. Additional cycle parking capacity at Arlesey interchange.
- Provide / enhance connections to National Cycle Route 12 linking North Hertfordshire and Bedford. Cycle infrastructure improvements to help complete National Cycle Route 12.
- Promotion of high-quality cycle parking facilities as part of development features.

N27

- Provide a high-quality link service through North Hertfordshire and potentially to Luton. Improve bus connectivity with North Hertfordshire (Hitchin and Stevenage). This is supported by traffic distribution evidence (i.e. car / van trips), which highlights North Hertfordshire, Welwyn, Hatfield and Stevenage, as key employment destinations.
- Car park capacity enhancements at Arlesey.
- Improved cycle parking facilities at existing and future public transport interchanges.
- Promotion of high-quality cycle parking facilities as part of development features.

N28

- As described largely for growth location N27.
- This is supported by evidence of car / van trips which shows a more evenly distributed coverage across destinations such as North Hertfordshire, Luton, Welwyn and Hatfield.

N29

- As described for growth location N27.

N30

- Provide a high-quality link service through North Hertfordshire and potentially to Luton. Improve bus connectivity with North Hertfordshire (Hitchin and Stevenage). This is supported by traffic distribution evidence (i.e. car / van trips), which highlights North Hertfordshire, Welwyn, Hatfield and Stevenage, as key employment destinations.
- Car park capacity enhancements at Arlesey.
- Improved cycle parking facilities at existing and future public transport interchanges.
- Promotion of high-quality cycle parking facilities as part of development features.

3.83 Although it is thought that there are valuable opportunities derived from large growth options linked to developer contributions, enhancements need to mitigate impacts of large development while maximising the benefits of interventions to the wider community.

Spatial options

- 3.84 The assessed locations were allocated to one or more spatial options according to the criteria described in Chapter 2. The results of this process are shown in **Table 3.14** with the shaded cells indicating that the location meets the criteria to be included within a spatial option.
- 3.85 This grouping exercise is not intended to be definitive and it is acknowledged that the locations could be grouped by other means and the parameters by which they have been grouped as part of this study could be re-defined if desired. It is also acknowledged that a location may fall within a category which belies its size in terms of assumed capacity; for example, a location categorised as a 'village extension' may have a potential maximum capacity which could in some cases exceed that of the existing village which it could theoretically 'extend'. However, it is important to acknowledge that in taking this study forward into the next stage of the Local Plan making process, CBC may devise spatial strategies which only take portions of various locations forward for development, if indeed at all, rather than the site as a whole; thus defining a location as a village extension does not necessarily seek to suggest that it would extend the subject village by the entire maximum assumed capacity.
- 3.86 Baring the above in mind therefore, the spatial option grouping exercise is intended to provide a selection of building blocks from which future alternative strategies could be generated through the Local Plan process and should be read as a tool rather than a definitive set of results. This is also particularly relevant as many of the locations fall within more than one spatial option.

Table 3.14: Categorisation of locations by spatial option

Location ID	Location Name	Assumed net total dwelling capacity	Estimated Net Capacity to 2035	New settlements	Village extensions	Growth in transport corridors	Urban extensions	Urban intensification around public transport hubs
N1	Salford	17,487	2,500	Yes	Yes - within 100m of Salford	Yes - less than 1km from A-roads (A421, A5130, A4146 and A509). Additionally, site is within close proximity to road improvement area.	No	No
N2	Wharley End West	1,357	1,357	No	Yes - within 100m of Wharley End	No	No	No
N3	Cranfield West	855	855	No	Yes - within 100m of Cranfield	No	No	No
N4	Cranfield East	475	475	No	Yes - within 100m of Cranfield	No	No	No
N5	M1 J13	7,953	2,500	Yes	Yes - within 100m of the edge of Aspley Guise	Yes - within 1.2km of three railway stations (Woburn Sands, Aspley Guise and Ridgmont) and less than 1km from motorway (M1) and A-roads (A421, A5 and A507). Additionally, majority of site covers road improvement area.	No	Yes - within 1.2km of three railway stations (Woburn Sands, Aspley Guise and Ridgmont)

Location ID	Location Name	Assumed net total dwelling capacity	Estimated Net Capacity to 2035	New settlements	Village extensions	Growth in transport corridors	Urban extensions	Urban intensification around public transport hubs
N6	Marston Moretaine South-Lidlington-Brogborough	17,002	2,500	Yes	Yes - within 100m of Marston Moretaine, Lidlington and Brogborough	Yes - within 1.2km of three railway stations (Ridgmont, Lidlington and Millbrook) and less than 1km from motorway (M1) and A-road (A421). Additionally, site is within close proximity to road improvement area.	No	Yes – within 1.2km of three railway stations (Ridgmont, Lidlington and Millbrook)
N7	Lidlington South	10,643	2,500	Yes	No	Yes - within 1.2km of two railway stations (Ridgmont and Lidlington) and less than 1km from motorway (M1) and A-road (A507 and A4012). Additionally, site is within close proximity to road improvement area.	No	Yes – within 1.2km of two railway stations (Ridgmont and Lidlington)
N8	Marston Moretaine North	7,117	2,500	Yes	Yes - within 100m of Lower Shelton, Upper Shelton and the edge of Marston Moretaine	Yes - less than 1km from A-road (A421). Additionally, site is within close proximity to road improvement area.	No	No
N9	Wixams-Stewartby-Houghton Conquest	6,366	2,500	No - Site is within 1km of banked site of Wixams	No	Yes - within 1.2km of railway station (Stewartby). Additionally, site is within close proximity to road improvement area.	Yes - within 100m of banked sites of Wixams	Yes - within 1.2km of railway station and adjacent to banked site of Wixams
N10	Sandy North East	4,868	2,000	Yes	No	No	No	No

Location ID	Location Name	Assumed net total dwelling capacity	Estimated Net Capacity to 2035	New settlements	Village extensions	Growth in transport corridors	Urban extensions	Urban intensification around public transport hubs
N11	Sandy North West	6,758	2,500	No - site is within 1km of top-tier settlement Sandy	No	Yes - less than 1km from A-road (A1). Additionally, majority of site covers road improvement area.	Yes - within 100m of the edge of Sandy	No
N12	Blunham South	484	484	No	Yes - within 100m of Chalton	No	No	No
N13	Sandy East	1,082	1,082	No	No	Yes - within 1.2km of railway station (Sandy)	Yes - within 100m of the edge of Sandy	Yes - adjacent to Sandy and less than 1.2km from railway station
N14	Potton West	1,678	900	No	Yes - within 100m of Potton	No	No	No
N15	Potton South	315	315	No	Yes - within 100m of the edge of Potton	No	No	No
N16	Biggleswade North	1,686	1,200	No	No	Yes - within 1.2km of railway station (Biggleswade) and less than 1km from A-roads (A1 and A6001). Additionally, site lies within road improvement area.	Yes - within 100m of Biggleswade	Yes - adjacent to Biggleswade and less than 1.2km from railway station

Location ID	Location Name	Assumed net total dwelling capacity	Estimated Net Capacity to 2035	New settlements	Village extensions	Growth in transport corridors	Urban extensions	Urban intensification around public transport hubs
N17	Sutton-Biggleswade	8,554	2,000	No	No	No	Yes - within 100m of the edge of Biggleswade	No
N18	Broom	455	455	No	Yes - within 100m of Broom	Yes - less than 1km from A-road (A1). Additionally, site is within close proximity to road improvement area.	No	No
N19	Biggleswade South	3,204	2,000	No	No	Yes - within 1.2km of railway station (Biggleswade) and less than 1km from A-road (A1). Additionally, site lies within road improvement area.	Yes - within 100m of Biggleswade	Yes - within close proximity of top-tier settlement Biggleswade and less than 1.2km from railway station
N20	South of Biggleswade	646	646	No	No	Yes - less than 1km from A-road (A1 and A6001). Additionally, site lies within road improvement area.	Yes - within 100m of allocated employment site for Biggleswade	No
N21	Shefford West	932	932	No	Yes - within 100m of Campton and the edge of Shefford	Yes - less than 1km from A-road (A600 and A507).	No	No
N22	Shefford South-Clifton	1,096	1,096	No	Yes - within 100m of Shefford and the edge of Clifton	Yes - less than 1km from A-road (A507).	No	No
N23	Meppershall	545	545	No	Yes - within 100m of the edge of Meppershall	Yes - less than 1km from A-road (A507).	No	No

Location ID	Location Name	Assumed net total dwelling capacity	Estimated Net Capacity to 2035	New settlements	Village extensions	Growth in transport corridors	Urban extensions	Urban intensification around public transport hubs
N24	Henlow-Clifton	637	637	No	Yes - within 100m of Clifton and Henlow	Yes - less than 1km from A-road (A507).	No	No
N25	Henlow Airfield	5,745	2,000	No	Yes - within 100m of the edge of Lower Stondon	Yes - less than 1km from A-road (A507, A600). Additionally, site is within close proximity to road improvement area.	No	No
N26	Henlow Camp-Lower Stondon	650	650	No	Yes - within 100m of the edge of Lower Stondon	Yes - less than 1km from A-road (A600).	No	No
N27	North of Church End	5,221	2,000	Yes	Yes - within 100m of Stotfold	Yes - within 1.2km of railway station (Arlesey) and less than 1km from A-road (A507). Additionally, site is within close proximity to road improvement area.	No	Yes - within 1.2km of railway station (Arlesey)
N28	Stotfold West	1,962	1,200	No	Yes - within 100m of Stotfold	Yes - less than 1km from A-road (A1 and A507). Additionally, site is within close proximity to road improvement area.	No	No































Location ID	Location Name	Assumed net total dwelling capacity	Estimated Net Capacity to 2035	New settlements	Village extensions	Growth in transport corridors	Urban extensions	Urban intensification around public transport hubs
N29	Arlesey-Fairfield Park	7,730	2,000	Yes	Yes - within 100m of the edge of Arlesey and Fairfield	Yes - less than 1km from A-road (A507). Additionally, site is within close proximity to road improvement area.	No	No
N30	Stotfold East	596	596	No	Yes - within 100m of the edge of Stotfold	Yes - less than 1km from A-road (A1 and A507). Additionally, site lies within road improvement area.	No	No

4 Conclusions and next steps

Assessment findings

- 4.1 Key findings from each strand of the assessment of locations are brought together in **Table 4.1**. Locations are simply listed in numerical order. For each location, information is presented on:
- Deliverability – the overall assessment rating;
 - Viability – the overall assessment rating;
 - Secondary constraints – the total number of difference secondary constraints present within the location;
 - Accessibility – whether there is a public transport hub within walking distance of the location;
 - Transport analysis – the overall assessment rating (future scenario) based on key transport indicators.









Table 4.1: Assessment findings for all locations

ID	Location name	Site area (ha)	Assumed density (dph)	Assumed total net capacity	Estimated net capacity to 2035	Overall deliverability (high / medium / low)	Overall viability (high / medium / low)	Overall accessibility (Future scenario - public transport led weighting)	No. of secondary constraints present (0-16)	Public transport hub within 1.2 km? (rail stn, guided busway stop, park & ride)	% of location with 'relatively strong' or higher overall contribution to Green Belt
N1	Salford	662.4	44	17487	2500	Low	High	Medium	 7	No	0%
N2	Wharley End West	75.4	30	1357	1357	High	Medium	High	 3	No	0%
N3	Cranfield West	47.5	30	855	855	Medium	Medium	High	 3	No	0%
N4	Cranfield East	26.4	30	475	475	High	Medium	High	 2	No	0%
N5	M1 J13	241.0	55	7953	2500	High	High	Medium	 6	Yes	0%
N6	Marston Moretaine South-Lidlington-Brogborough	515.2	55	17002	2500	High	Low	Medium	 9	Yes	0%
N7	Lidlington South	322.5	55	10643	2500	High	Low	High	 6	Yes	0%
N8	Marston Moretaine North	269.6	44	7117	2500	Low	Medium	High	 6	No	0%
N9	Wixams-Stewartby-Houghton Conquest	192.9	55	6366	2000	Medium	Medium	High	 7	Yes	0%
N10	Sandy North East	184.4	44	4868	2000	Low	High	Medium	 6	No	0%
N11	Sandy North West	256.0	44	6758	2500	Medium	High	Medium	 5	No	0%
N12	Blunham South	26.9	30	484	484	Medium	High	Medium	 5	No	0%
N13	Sandy East	32.8	55	1082	1082	Medium	Medium	High	 4	Yes	0%
N14	Potton West	93.2	30	1678	900	Low	High	Medium	 5	No	0%
N15	Potton South	17.5	30	315	315	Medium	High	Medium	 5	No	0%
N16	Biggleswade North	51.1	55	1686	1200	Medium	Low	Medium	 6	Yes	0%
N17	Sutton-Biggleswade	324.0	44	8554	2000	Low	High	Medium	 7	No	0%
N18	Broom	25.3	30	455	455	Medium	High	Medium	 3	No	0%
N19	Biggleswade South	97.1	55	3204	2000	Medium	High	Medium	 7	Yes	0%
N20	South of Biggleswade	35.9	30	646	646	Medium	High	Medium	 3	No	0%
N21	Shefford West	51.8	30	932	932	Medium	High	Medium	 4	No	0%
N22	Shefford South-Clifton	60.9	30	1096	1096	Medium	High	Medium	 6	No	0%
N23	Meppershall	30.3	30	545	545	Medium	High	Medium	 4	No	0%
N24	Henlow-Clifton	35.4	30	637	637	Medium	High	Medium	 7	No	0%
N25	Henlow Airfield	217.6	44	5745	2000	Low	High	Medium	 5	No	0%
N26	Henlow Camp-Lower Stondon	36.1	30	650	650	Medium	High	Medium	 4	No	0%
N27	North of Church End	158.2	55	5221	2000	Medium	Medium	Medium	 8	Yes	0%
N28	Stotfold West	109.0	30	1962	1200	Medium	High	Medium	 7	No	0%
N29	Arlesey-Fairfield Park	292.8	44	7730	2000	Low	High	Medium	 5	No	0%
N30	Stotfold East	33.1	30	596	596	Medium	High	Low	 4	No	0%
	TOTAL			124099	42425						

Assessment findings by spatial option

- 4.2 As previously described, locations were categorised into various thematic spatial options. It is considered unlikely that a Local Plan spatial strategy would be comprised purely of locations falling into one of these spatial options. Nevertheless, in developing their spatial strategies, CBC may have a clear preference for focussing the majority of development in a particular spatial pattern. The results of the Growth Options Study are therefore also presented by spatial option in **Table 4.2** to **Table 4.6** to support such an approach.

Table 4.2: Performance of 'New Settlement' locations⁹

ID	Location name	Site area (ha)	Assumed density (dph)	Assumed total net capacity	Estimated net capacity to 2035	Overall deliverability (high / medium / low)	Overall viability (high / medium / low)	Overall accessibility (Future scenario - public transport led weighting)	No. of secondary constraints present (0-16)	Public transport hub within 1.2 km? (rail stn, guided busway stop, park & ride)	% of location with 'relatively strong' or higher overall contribution to Green Belt
N1	Salford	662.4	44	17487	2500	Low	High	Medium	 7	No	0%
N5	M1 J13	241.0	55	7953	2500	High	High	Medium	 6	Yes	0%
N6	Marston Moretaine South-Lidlington-Brogborough	515.2	55	17002	2500	High	Low	Medium	 9	Yes	0%
N7	Lidlington South	322.5	55	10643	2500	High	Low	High	 6	Yes	0%
N8	Marston Moretaine North	269.6	44	7117	2500	Low	Medium	High	 6	No	0%
N10	Sandy North East	184.4	44	4868	2000	Low	High	Medium	 6	No	0%
N27	North of Church End	158.2	55	5221	2000	Medium	Medium	Medium	 8	Yes	0%
N29	Arlesey-Fairfield Park	292.8	44	7730	2000	Low	High	Medium	 5	No	0%
Total				78021	18500						

⁹ Locations are sorted by location ID number, i.e. locations are NOT ranked by any individual indicator

Table 4.3: Performance of 'Village Extension' locations¹⁰

ID	Location name	Site area (ha)	Assumed density (dph)	Assumed total net capacity	Estimated net capacity to 2035	Overall deliverability (high / medium / low)	Overall viability (high / medium / low)	Overall accessibility (Future scenario - public transport led weighting)	No. of secondary constraints present (0-16)	Public transport hub within 1.2 km? (rail stn, guided busway stop, park & ride)	% of location with 'relatively strong' or higher overall contribution to Green Belt	
N1	Salford	662.4	44	17487	2500	Low	High	Medium		7	No	0%
N2	Wharley End West	75.4	30	1357	1357	High	Medium	High		3	No	0%
N3	Cranfield West	47.5	30	855	855	Medium	Medium	High		3	No	0%
N4	Cranfield East	26.4	30	475	475	High	Medium	High		2	No	0%
N5	M1 J13	241.0	55	7953	2500	High	High	Medium		6	Yes	0%
N6	Marston Moretaine South-Lidlington-Brogborough	515.2	55	17002	2500	High	Low	Medium		9	Yes	0%
N8	Marston Moretaine North	269.6	44	7117	2500	Low	Medium	High		6	No	0%
N12	Blunham South	26.9	30	484	484	Medium	High	Medium		5	No	0%
N14	Potton West	93.2	30	1678	900	Low	High	Medium		5	No	0%
N15	Potton South	17.5	30	315	315	Medium	High	Medium		5	No	0%
N18	Broom	25.3	30	455	455	Medium	High	Medium		3	No	0%
N21	Shefford West	51.8	30	932	932	Medium	High	Medium		4	No	0%
N22	Shefford South-Clifton	60.9	30	1096	1096	Medium	High	Medium		6	No	0%
N23	Meppershall	30.3	30	545	545	Medium	High	Medium		4	No	0%
N24	Henlow-Clifton	35.4	30	637	637	Medium	High	Medium		7	No	0%
N25	Henlow Airfield	217.6	44	5745	2000	Low	High	Medium		5	No	0%
N26	Henlow Camp-Lower Stondon	36.1	30	650	650	Medium	High	Medium		4	No	0%
N27	North of Church End	158.2	55	5221	2000	Medium	Medium	Medium		8	Yes	0%
N28	Stotfold West	109.0	30	1962	1200	Medium	High	Medium		7	No	0%
N29	Arlesey-Fairfield Park	292.8	44	7730	2000	Low	High	Medium		5	No	0%
N30	Stotfold East	33.1	30	596	596	Medium	High	Low		4	No	0%
	Total			80292	26497							

¹⁰ Locations are sorted by location ID number, i.e. locations are NOT ranked by any individual indicator

Table 4.4: Performance of 'Growth in Transport Corridors' locations¹¹

ID	Location name	Site area (ha)	Assumed density (dph)	Assumed total net capacity	Estimated net capacity to 2035	Overall deliverability (high / medium / low)	Overall viability (high / medium / low)	Overall accessibility (Future scenario - public transport led weighting)	No. of secondary constraints present (0-16)	Public transport hub within 1.2 km? (rail stn, guided busway stop, park & ride)	% of location with 'relatively strong' or higher overall contribution to Green Belt
N1	Salford	662.4	44	17487	2500	Low	High	Medium	7	No	0%
N5	M1 J13	241.0	55	7953	2500	High	High	Medium	6	Yes	0%
N6	Marston Moretaine South-Lidlington-Brogborough	515.2	55	17002	2500	High	Low	Medium	9	Yes	0%
N7	Lidlington South	322.5	55	10643	2500	High	Low	High	6	Yes	0%
N8	Marston Moretaine North	269.6	44	7117	2500	Low	Medium	High	6	No	0%
N9	Wixams-Stewartby-Houghton Conquest	192.9	55	6366	2000	Medium	Medium	High	7	Yes	0%
N11	Sandy North West	256.0	44	6758	2500	Medium	High	Medium	5	No	0%
N13	Sandy East	32.8	55	1082	1082	Medium	Medium	High	4	Yes	0%
N16	Biggleswade North	51.1	55	1686	1200	Medium	Low	Medium	6	Yes	0%
N18	Broom	25.3	30	455	455	Medium	High	Medium	3	No	0%
N19	Biggleswade South	97.1	55	3204	2000	Medium	High	Medium	7	Yes	0%
N20	South of Biggleswade	35.9	30	646	646	Medium	High	Medium	3	No	0%
N21	Shefford West	51.8	30	932	932	Medium	High	Medium	4	No	0%
N22	Shefford South-Clifton	60.9	30	1096	1096	Medium	High	Medium	6	No	0%
N23	Meppershall	30.3	30	545	545	Medium	High	Medium	4	No	0%
N24	Henlow-Clifton	35.4	30	637	637	Medium	High	Medium	7	No	0%
N25	Henlow Airfield	217.6	44	5745	2000	Low	High	Medium	5	No	0%
N26	Henlow Camp-Lower Stondon	36.1	30	650	650	Medium	High	Medium	4	No	0%
N27	North of Church End	158.2	55	5221	2000	Medium	Medium	Medium	8	Yes	0%
N28	Stotfold West	109.0	30	1962	1200	Medium	High	Medium	7	No	0%
N29	Arlesey-Fairfield Park	292.8	44	7730	2000	Low	High	Medium	5	No	0%
N30	Stotfold East	33.1	30	596	596	Medium	High	Low	4	No	0%
	Total			105513	34039						









¹¹ Locations are sorted by location ID number, i.e. locations are NOT ranked by any individual indicator

Table 4.5: Performance of 'Urban Extension' locations¹²

ID	Location name	Site area (ha)	Assumed density (dph)	Assumed total net capacity	Estimated net capacity to 2035	Overall deliverability (high / medium / low)	Overall viability (high / medium / low)	Overall accessibility (Future scenario - public transport led weighting)	No. of secondary constraints present (0-16)	Public transport hub within 1.2 km? (rail stn, guided busway stop, park & ride)	% of location with 'relatively strong' or higher overall contribution to Green Belt
N9	Wixams-Stewartby-Houghton Conquest	192.9	55	6366	2000	Medium	Medium	High	7	Yes	0%
N11	Sandy North West	256.0	44	6758	2500	Medium	High	Medium	5	No	0%
N13	Sandy East	32.8	55	1082	1082	Medium	Medium	High	4	Yes	0%
N16	Biggleswade North	51.1	55	1686	1200	Medium	Low	Medium	6	Yes	0%
N17	Sutton-Biggleswade	324.0	44	8554	2000	Low	High	Medium	7	No	0%
N19	Biggleswade South	97.1	55	3204	2000	Medium	High	Medium	7	Yes	0%
N20	South of Biggleswade	35.9	30	646	646	Medium	High	Medium	3	No	0%
	Total			28296	11428						

¹² Locations are sorted by location ID number, i.e. locations are NOT ranked by any individual indicator

Table 4.6: Performance of 'Intensification around Public Transport Hubs' locations¹³

ID	Location name	Site area (ha)	Assumed density (dph)	Assumed total net capacity	Estimated net capacity to 2035	Overall deliverability (high / medium / low)	Overall viability (high / medium / low)	Overall accessibility (Future scenario - public transport led weighting)	No. of secondary constraints present (0-16)	Public transport hub within 1.2 km? (rail stn, guided busway stop, park & ride)	% of location with 'relatively strong' or higher overall contribution to Green Belt
N5	M1 J13	241.0	55	7953	2500	High	High	Medium	 6	Yes	0%
N6	Marston Moretaine South-Lidlington-Brogborough	515.2	55	17002	2500	High	Low	Medium	 9	Yes	0%
N7	Lidlington South	322.5	55	10643	2500	High	Low	High	 6	Yes	0%
N9	Wixams-Stewartby-Houghton Conquest	192.9	55	6366	2000	Medium	Medium	High	 7	Yes	0%
N13	Sandy East	32.8	55	1082	1082	Medium	Medium	High	 4	Yes	0%
N16	Biggleswade North	51.1	55	1686	1200	Medium	Low	Medium	 6	Yes	0%
N19	Biggleswade South	97.1	55	3204	2000	Medium	High	Medium	 7	Yes	0%
N27	North of Church End	158.2	55	5221	2000	Medium	Medium	Medium	 8	Yes	0%
	Total			53157	15782						

¹³ Locations are sorted by location ID number, i.e. locations are NOT ranked by any individual indicator

Next Steps

- 4.3 CBC have devised a series of steps to take the findings of this study, alongside the Luton HMA Growth Options Study and other relevant studies, forward through their Local Plan process. Both Growth Options Studies form distinct components of the evidence base for CBC's Local Plan without attempting to define a spatial strategy within them due to the complex relationship with other policies and priorities that are not considered within the studies. Nonetheless, in the context of the emerging CBC Local Plan and a preferred and robust spatial strategy, the findings of the studies need to be drawn together to guide decision making as the Local Plan takes shape.