

Birmingham City Council

Sustainability Appraisal of the Birmingham Development Plan

Interim Sustainability Appraisal of the Options Consultation Document



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Birmingham City Council

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AMEC Environment & Infrastructure
UK Limited

October 2012

Draft Report Disclaimer

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Non-Technical Summary

Purpose of this Report

This report has been produced for the purpose of evaluating the sustainability impacts of options being presented by Birmingham City Council for accommodating revised growth requirements through the Birmingham Development Plan. The Birmingham Development Plan has been subject to Sustainability Appraisal (SA) during its evolution and this Interim Report is the latest stage in that process. The Report accompanies the Options Consultation Document which is being consulted upon by Birmingham City Council, which has been produced in light of the re-estimation of the likely growth requirements for the City to 2031 following the analysis of revised population projections.

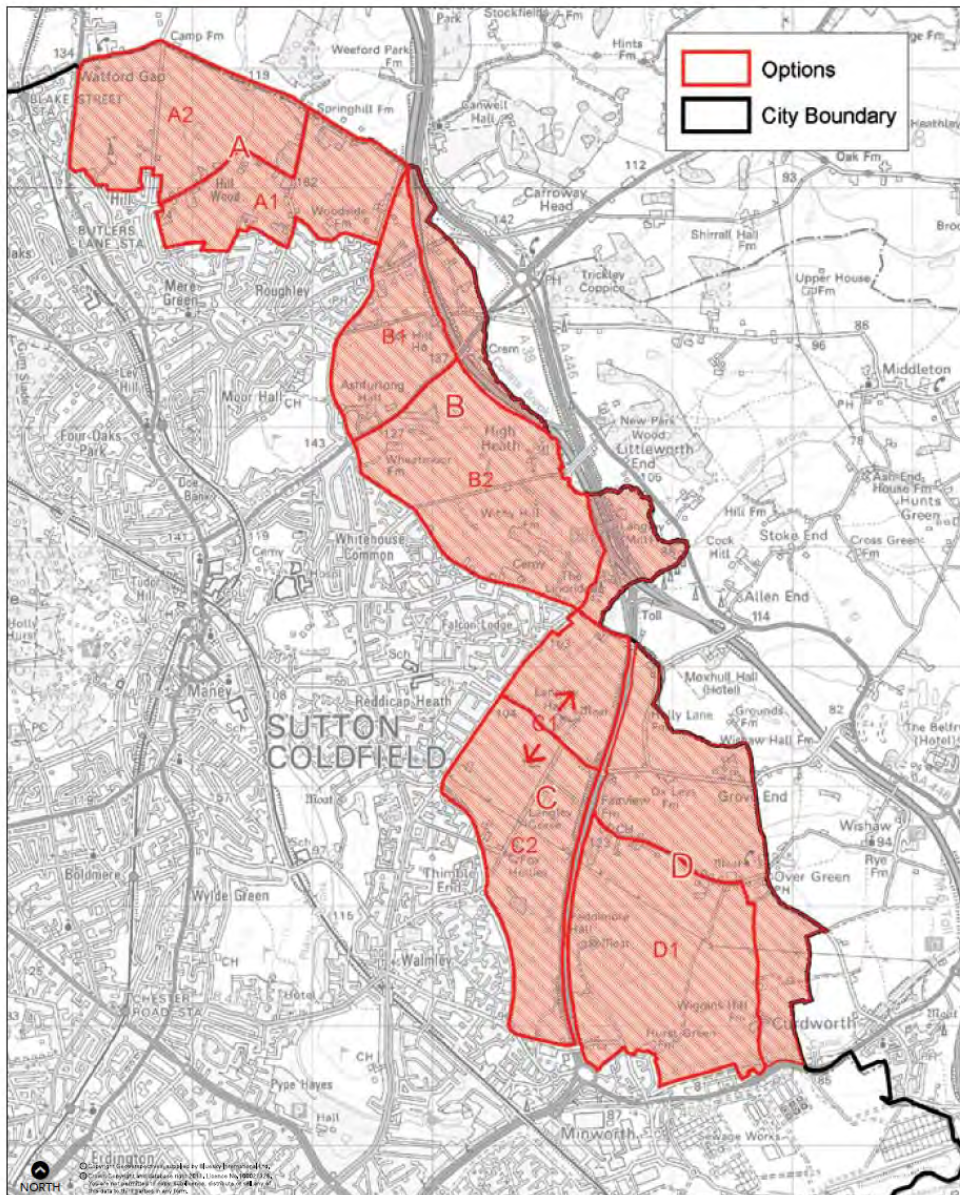
Thus far, it was calculated that the City's development needs could be accommodated within the existing built up area of the City. However, in light of population changes, the scale of the projected increase (from 50,600 to 75,000-95,000 dwellings to 2031) means that land must be sought elsewhere. This can be partially through co-operation with neighbouring authorities, but will also demand the use of land within Birmingham's boundaries for approximately 10,000 dwellings.

The Options

The results of the Sustainability Appraisal complement those of the Green Belt Options analysis set out in a separate report¹ which uses a constraints-based approach to evaluating the suitability of four alternative sites (Figure NTS1): areas A, B, C and D.

¹ Birmingham City Council (October 2012) Birmingham's Green Belt Options

Figure NTS 1 Greenfield Development Options



Therefore, for the purposes of the Sustainability Appraisal, the options to be appraised are:

- Option 1: Do nothing i.e. not seeking to accommodate the additional projected growth (i.e. the level of growth proposed in the Preferred Option [2010]).
- Option 2: Accommodate additional projected growth within the existing urban area.
- Option 3: Strategic Green Belt Release (plus sub-options relating to individual sites):
 - Area A: Hill Wood, East of Watford Gap (two sub-options).

- Area B: West of the M6 Toll (two sub-options).
- Area C: West of the Sutton Coldfield Bypass, Walmley (two sub-options).
- Area D: East of the Sutton Coldfield Bypass, Walmley.

The appraisal combines both strategic and site-specific considerations using available data drawn from the updated Scoping Report which accompanies this document. Further scrutiny of the sustainability performance of the sites will be required as part of the selection of any preferred site, and the high level analysis is presented here to accompany the planning appraisal.

Key Messages from the Appraisal

Option		Likely Cumulative Environmental Effects	Likely Cumulative Economic Effects	Likely Cumulative Social Effects
1. Do not accommodate additional projected growth		Efficient use of existing land resources, with opportunities to enhance existing urban environment associated with SUN approach.	Opportunities for growth could be missed through lack of additional employment land being allocated.	No provision for additional housing, leading to lack of housing opportunities and additional pressure on adjoining areas.
2. Accommodate additional projected growth within the existing urban area		As above, but loss/compromising of assets such as open space and cultural heritage resources.	Potential loss of employment land leading to reduced capacity to respond to future growth. Loss of economic opportunities to adjacent areas.	Potential over-burdening of services and transport network, although this would be location-specific. Decline in overall quality of life is likely.
3. Allocate land for an urban extension	Area A	Greenfield land-take, and potential increases in emissions associated with car-based travel, associated both with the development and from outside. Sites of Local Interest for Nature Conservation and cultural heritage affected.	Additional employment land, either as part of a mixed use development or stand-alone will provide opportunities for existing residents in adjacent areas, and the potential for future economic growth of the City.	Service provision clustered at Mere Green (including health services, shops and schools) could provide the basis for complementary provision at this location. Butlers Lane railway station, for example, could provide a focus for sustainable travel to Sutton Coldfield, Birmingham and Lichfield. Supplementing the currently limited open space provision in the vicinity would demand particular attention as part of any development.
	Area B	Greenfield land-take, and potential increases in emissions associated with car-based travel, associated both with the development and from outside. Flood risk associated with part of the site. Sites of Importance for Nature Conservation and Sites of Local Interest for Nature Conservation and cultural heritage affected.	Additional employment land, either as part of a mixed use development or stand-alone will provide opportunities for existing residents in adjacent areas, and the potential for future economic growth of the City.	Service provision clustered at Mere Green, Sutton Coldfield and Reddicap Heath (including health services, shops and schools) could provide the basis for complementary provision at this location. Four Oaks and Sutton Coldfield railway stations lie approximately 2km to the west but could be focal points for sustainable travel. Open space provision in the vicinity is reasonable (Sutton Park for example) but would demand particular attention as part of any development.
	Area C	Greenfield land-take, and potential increases in	Additional employment land, either as part of a mixed use	Bounded by the existing urban edge and the A38, this area has access

Option		Likely Cumulative Environmental Effects	Likely Cumulative Economic Effects	Likely Cumulative Social Effects
		emissions associated with car-based travel, associated both with the development and from outside. Flood risk associated with part of the site. Sites of Local Interest for Nature Conservation and cultural heritage affected.	development or stand-alone will provide opportunities for existing residents in adjacent areas, and the potential for future economic growth of the City.	to a range of services at Reddick Heath and Walmley which could provide the basis for complementary provision at this location. Rail access is via Sutton Coldfield station at around 2.5km. Open space provision in the vicinity is reasonable but would demand particular attention as part of any development.
	Area D	Greenfield land-take, and potential increases in emissions associated with car-based travel, associated both with the development and from outside. Sites of Local Interest for Nature Conservation and cultural heritage affected.	Additional employment land, either as part of a mixed use development or stand-alone will provide opportunities for existing residents in adjacent areas, and the potential for future economic growth of the City.	This area is relatively remote from service provision to the west (by distance and severance by the A38), although there is some provision (retail and schools) to the south at Minworth. Rail access is around 4km distant at Sutton Coldfield. Open space provision in the vicinity is limited and would demand particular attention as part of any development.

Conclusions

This SA has identified that the urban extension option could represent a reasonable compromise if of a sufficient scale and carefully integrated with the existing urban edge, both physically and in terms of service provision. The precise physical disposition of such development would need to be explored in greater detail (exploring the capacity of road systems and services, for example), but in principle, the objectives of sustainability are probably better achieved through a single development which provides a critical mass for the provision of services and green infrastructure, for example, which would promote a relatively high degree of self-containment. The approach is not without potential risks which would need to be mitigated, including anticipating issues regarding cross-commuting to and from employment areas, and the long-term integration of any extension into the existing urban fabric and adjoining rural area.

Consultation

Consultation has been undertaken on the emerging Birmingham Development Plan and this Report is presented together with the Options Consultation Document. Questions regarding this Report should be addressed to:

Strategic Planning, Birmingham City Council, 1 Lancaster Circus, Queensway, Birmingham B4 7DG

Email: planningstrategy@birmingham.gov.uk

Tel: 0121 303 4041

Contents

Non-Technical Summary

Purpose of this Report	v
The Options	v
Key Messages from the Appraisal	vii
Conclusions	viii
Consultation	viii

1. Introduction	1
1.1 The Birmingham Development Plan	1
1.2 Purpose of this Report and Requirements for Sustainability Appraisal and Strategic Environmental Assessment	1
1.3 Structure of this Report	2
1.4 Difficulties Encountered and Information Gaps	2
1.5 Consultation	2
2. Appraisal Methodology	2
2.1 Appraisal of the Strategic Options and the Relationship with the Sustainability Appraisal of the Birmingham Development Plan	3
2.1.1 Sustainability Issues Affecting the City	3
2.1.2 The Sustainability Appraisal Framework	4
2.1.3 The Option Appraisal Framework	7
2.1.4 Option Selection	8
3. Options Appraisal	11
3.1 Introduction	11
3.1.1 Option 1: Do not accommodate projected additional growth	11
3.1.2 Option 2: Accommodate additional projected growth within the urban area	11
3.1.3 Option 3: Sustainable urban extension	12
3.2 Comparative Appraisal	12
3.3 Summary of Appraisal Findings	19
4. Conclusions and Next Steps	21
4.1 Quality Assurance Checklist	21

Table 2.1	The Sustainability Appraisal Framework	4
Table 2.2	Appraisal Template	7
Table 3.1	Comparative Appraisal of the Performance of the Options	13
Table 3.2	Cumulative Environmental, Economic and Social Effects by Option	19
Figure NTS 1	Greenfield Development Options	vi
Figure 2.1	Greenfield Development Options	8
Appendix A	Stages of the SA/SEA Process	
Appendix B	Facilities and Resources in the Vicinity of the Sub-options	

1. Introduction

1.1 The Birmingham Development Plan

Changes in national policy (principally publication of the National Planning Policy Framework [NPPF]) and the recalculation of likely housing demand in light of the latest population projections means that an adjustment to the approach accommodating this development is required. Thus far, it was calculated that the City's development needs could be accommodated within the existing built up area of the City. However, the scale of the projected increase (from 50,600 to 75,000-95,000 dwellings to 2031) means that land must be sought elsewhere. This can be partially through co-operation with neighbouring authorities, but will also demand the use of land within Birmingham's boundaries for approximately 10,000 dwellings. The Options Consultation Document on the Birmingham Development Plan sets Birmingham City Council's response to these needs, presenting a series of potential development options on Green Belt land to accommodate the development requirement.

1.2 Purpose of this Report and Requirements for Sustainability Appraisal and Strategic Environmental Assessment

This Report has been produced to accompany the Options Consultation Document and is the latest stage in the Sustainability Appraisal of the Birmingham Development Plan². Its purpose is to use the Sustainability Framework developed in previous stages to test the strategic options presented against one another and against reasonable alternatives. The SEA Directive requires that the Environmental Report should consider 'reasonable alternatives taking into account the objectives and geographical scale of the plan or programme' and give 'an outline of the reasons for selecting the alternatives dealt with' (Article 5.1 and Annex I (h)). The Report is part of Stage B of the SA/SEA process (see **Appendix B**).

The results of the Sustainability Appraisal complement those of the Green Belt Options analysis set out in a separate report³ which uses a constraints-based approach to evaluating the suitability of six alternative sites. Therefore, for the purposes of the Sustainability Appraisal, the options to be appraised are:

- Option 1: Do nothing i.e. not seeking to accommodate the additional projected growth (i.e. the level of growth proposed in the Preferred Option [2010]).
- Option 2: Accommodate additional projected growth within the existing urban area.
- Option 3: Strategic Green Belt Release (plus sub-options relating to individual sites).

² See Sustainability Appraisal Scoping Report (2007, rev.2010, rev.2012); Appraisal of Issues and Options (2008); Appraisal of Preferred Options (November 2010).

³ Birmingham City Council (September 2012) Birmingham's Green Belt Options (Draft Version 30/08/12).

The Options Consultation Document discusses the issues associated with these alternatives, but it is the role of the Sustainability Appraisal to evaluate them against the proposed course of action i.e. releasing land on the periphery of the City.

1.3 Structure of this Report

This report sets out the findings of an Interim Sustainability Appraisal of the Options Consultation Document (October 2012) for the Birmingham Development Plan. The remainder of this Report is set out as follows:

- **chapter 2** sets out the SA Methodology employed in appraising the options associated with the current consultation.;
- **chapter 3** sets out the appraisal of the options for a strategic allocation of approximately 10,000 dwellings as well as alternatives identified in paragraph 1.2, comparing environmental, economic and social impacts;
- **chapter 4** sets out the prediction and evaluation of significant effects, including impacts on and from neighbouring authorities and cumulative impacts; and
- **chapter 5** sets out the overall conclusions of the study and the next steps.

1.4 Difficulties Encountered and Information Gaps

The SEA Directive requires the identification of any difficulties encountered or limitations associated with the preparation of the Report. In preparing this report the best data available at the time has been used, including an updated Scoping Report. However, there are information gaps, including:

- detailed traffic assessments to appraise the suitability of the road infrastructure in the vicinity of the options;
- detailed travel and accessibility assessments in the proximity of the option sites;
- capacity assessments of existing services; and
- detailed appraisals of the capacity of the sites within the urban area.

1.5 Consultation

Consultation has been undertaken on the emerging Birmingham Development Plan and this Report is presented together with the Options Consultation Document. Questions regarding this Report should be addressed to:

Strategic Planning, Birmingham City Council, 1 Lancaster Circus, Queensway, Birmingham B4 7DG

Email: planningstrategy@birmingham.gov.uk

Tel: 0121 303 4041

2. Appraisal Methodology

2.1 Appraisal of the Strategic Options and the Relationship with the Sustainability Appraisal of the Birmingham Development Plan

2.1.1 Sustainability Issues Affecting the City

The following sustainability issues have been identified from the analysis in the Scoping Report.

SA Theme	Key Issues
SA Theme 1: Natural resources and waste	The key impacts here concern the relationships between the level of growth proposed in the Birmingham Development Plan and the significant demand for natural resources (minerals, water and land) and the production of waste.
SA Theme 2: CO ₂ emissions	The City Council is committed to securing reductions in CO ₂ emissions, with the Sustainable Community Strategy setting a target for a 60% reduction in emissions by 2026. The main source of emissions is likely to come from the built environment and transport, both of which are sources that the Birmingham Development Plan can influence through encouraging the greater co-ordination of where people live and work to reduce the need for commuting. Currently, for example, some 50% of those who live and work in Birmingham commute by car, and this rises to around 75% of those who live outside Birmingham but work in Birmingham.
SA Theme 3: Climate change adaptation	Current evidence, based on a review of the potential impacts of climate change at the regional level and the draft Birmingham Climate Change Action Plan, suggests that the City will need to be prepared for a range of potential impacts including increases in flooding, summer droughts and a greater probability of extreme weather events (heat waves and extreme floods for example).
SA Theme 4: Historic environment, landscape, biodiversity and geodiversity	<p>Historic environment: The key impacts here are likely to relate to the impacts of new development and infrastructure on Birmingham's historic environment, including scheduled ancient monuments, listed buildings, conservation areas, registered parks and gardens and canal network. There are over 2,500 entries on the Scheduled Monuments Record, 14 Registered Parks and Gardens and 25 Conservation Areas, all potentially vulnerable to the pressures of urban intensification.</p> <p>Landscape: New development is likely have an impact on the City's landscapes both within the existing urban area (parks, gardens and other greenspace) and outside of urban area where greenfield development is required. Within the main urban area the impacts could relate to development pressures on landscape features including parks, gardens and water courses. Outside the City, the major opportunities for greenfield development lie to the north/north east of the town (Sutton Coldfield) and to the south/south-west (beyond Longbridge) so the impacts of greenfield development (if required) on the surrounding landscape would more likely be felt here. Some 18% of the City's area is open space of varying kinds and urban intensification could have a significant impact on this through development and user pressures.</p> <p>Biodiversity: The City accommodates a range of designated sites of nature conservation importance and will have other non-designated areas which make an important contribution to biodiversity. This will include both previously developed land and buildings and greenfield sites. New development will have a detrimental impact on ecology and biodiversity where this involves the loss of habitats or leads to activities which will adversely impact on these features.</p> <p>Geodiversity: Concerns the variety of rocks, minerals and landforms and the processes which have informed these features over time. There could be impacts outside of the City in relation to the demand for minerals to build new homes, businesses and infrastructure (explored under SA Theme 1)</p>
SA Theme 5: Pollution	Air pollution: The whole of Birmingham was designated an Air Quality Management Area (AQMA) in 2003 to help improve air quality in the City. The main pollutant is nitrogen dioxide (NO ₂), arising from both transport and industry.

SA Theme	Key Issues
	<p>Water pollution: The proportion of Birmingham's waterways which are of a good biological or chemical quality is significantly below national and regional averages.</p> <p>Soil pollution: Outside of the urban area to the north and north east of the city as well as to the south west are areas of Grade 3 (moderate to good quality) agricultural land which could clearly be impacted on where greenfield development is proposed.</p> <p>Noise pollution: The key impacts here are likely to relate to the specific of particular development proposals rather than direct impacts associated with the levels of growth proposed, notwithstanding that an expanded BIA could have a potential impact in terms of increased air traffic over the city.</p>
SA Theme 6: Economic growth	The main impact that the Birmingham Development Plan will have on economic growth relates to whether or not it provides a sufficient and flexible supply of employment land and premises, attractive to developers and investors wishing to expand or establish themselves in Birmingham.
SA Theme 7: Communities, healthy lifestyles and equality	The Birmingham Development Plan will have a range of impacts on Birmingham's existing and new communities relating to the new growth that it proposed in terms of meeting people's housing needs and opportunities for employment. It will also impact on their ability to access education, healthcare and other services, considering the capacity of existing facilities and opportunities for enhancement aligned with proposed growth.
SA Theme 8: Housing	The key impacts relate to whether or not the Birmingham Development Plan will provide enough housing, in the right locations and of the right type. There will need to be a suitable supply of both market and affordable housing to meet the needs of existing and new residents. The availability of housing also has significant linkages with economic growth, in terms of providing local housing to house the labour force. A failure to provide sufficient housing within the City to support economic growth could lead to unsustainable travel patterns with high levels of 'in-commuting' and undermining self-containment or, as a worst case, the decline of the City's economy.

2.1.2 The Sustainability Appraisal Framework

The SA Scoping Report and subsequent interim appraisal reports have used the following framework to appraise plan options and policies (**Table 2.1**).

Table 2.1 The Sustainability Appraisal Framework

SA Theme	SA Objectives	Guide Questions for the SA Will the Birmingham Development Plan help to ...	Principal SEA Directive Topic
1. Natural resources and waste	1. Resource Use: Use natural resources such as water and minerals efficiently.	Incorporate energy efficiency measures into new land use and developments, redevelopment and refurbishment? Promote and support resource efficient technologies? Reward efficient resource use? Reduce water consumption?	Material assets
	7. Waste Reduction and Minimisation: Encourage and enable waste minimisation, reuse, recycling and recovery.	Divert resources away from the waste stream, including the use of recycled materials where possible?	Material assets
	8. Efficient use of land: Encourage land use and development that	Encourage the efficient use of land and minimise the loss of greenfield land?	Material assets

SA Theme	SA Objectives	Guide Questions for the SA Will the Birmingham Development Plan help to ...	Principal SEA Directive Topic
	optimises the use of previously developed land and buildings.	Value and protect the biodiversity/geodiversity (of previously developed land and buildings)?	
2. CO ₂ emissions	2. Sustainable design, construction and maintenance: Promote and ensure high standards of sustainable resource-efficient design, construction and maintenance of buildings, where possible exceeding the requirements of the Building Regulations.	Reduce dependence on fossil fuels? Increase the number of buildings which meet recognised standards for sustainability?	Material assets
	3. Renewable Energy: Encourage development of alternative and renewable resources.	Reduce dependence on fossil fuels? Promote and support the development of new high value and low impact technologies, especially resource efficient technologies and environmental technology initiatives? Increase the proportion of energy generated from renewable and low carbon sources, including micro generation, CHP, district heating and transportation?	Material assets
	4. Energy Efficiency: Reduce overall energy use through energy efficiency.	Reduce energy consumption?	Material assets
	5. Sustainable Transport: Increase use of public transport, cycling and walking as a proportion of total travel and ensure development is primarily focused in the major urban areas, making efficient use of existing physical transport infrastructure.	Reduce road traffic congestion, pollution and accidents? Encourage walking and cycling? Reduce travel by private car? Promote accessibility for disabled people?	Material assets
	6. Reduce the need to travel: Ensure development reduces the need to travel.	Reduce traffic volumes? Reduce average journey length?	Material assets
	9. Reduce climate change: Minimise Birmingham's contribution to the causes of climate change by reducing emissions of greenhouse gases from transport, domestic, commercial and industrial sources.	Reduce emissions of greenhouse gases by reducing energy consumption?	Climatic factors
3. Climate change adaptation	10. Manage Climate Change: Implement a managed response to the unavoidable impacts of climate change, ensuring that the design and planning process takes into account predicted changes in Birmingham's climate including flood risk.	Minimise the risk of flooding from rivers and watercourses to people and property? Reduce the risk of damage to property from storm events? Protect, enhance and extend green infrastructure resources? Address climate change adaptation for biodiversity fragmentation?	Climatic factors
4. Historic environment, landscape, biodiversity and geodiversity	12. Built and Historic Environment: Value, protect, enhance and restore Birmingham's built and historic environment and landscape.	Protect and enhance features of built and historic environment and landscape?	Cultural heritage
	13. Natural Landscape: Value, protect, enhance and restore Birmingham's natural landscape.	Safeguard and enhance the character of the local landscape and local distinctiveness? Improve the landscape quality and character of the countryside?	Landscape
	14. Biodiversity: Value, protect, maintain, restore and re-create local biodiversity and geodiversity.	Use approaches that improve the resilience of natural systems such as linking fragmented habitats where possible? Conserve and enhance natural/semi-natural habitats and	Biodiversity, flora and fauna

SA Theme	SA Objectives	Guide Questions for the SA Will the Birmingham Development Plan help to ...	Principal SEA Directive Topic
		conserve and enhance species diversity? Lead to habitat creation delivering BAP priorities?	
5. Pollution	15. Air Quality: Minimise air pollution levels and create good quality air.	Improve air quality? Reduce CO2 emissions?	Air
	16. Water Quality: Minimise water pollution levels and create good quality water.	Improve water quality?	Water
	17. Soil Quality: Minimise soil pollution levels and create good quality soil.	Maintain and enhance soil quality? Minimise the loss of soils to development?	Soil
	18. Noise: Minimise noise pollution levels.	Cause noise pollution? Propose mitigation measures to minimise noise pollution?	Human health
6. Economic growth	20. Economy and Equality: Achieve a strong, stable and sustainable economy and prosperity for the benefit of all of Birmingham's inhabitants.	Encourage and support a culture of enterprise and innovation, including social enterprise? Improve business development and enhance competitiveness? Promote growth in key sectors? Reduce unemployment, especially amongst disadvantaged groups?	Population
	21. Learning and Skills: Promote investment in future prosperity, including ongoing investment and engagement in learning and skills development.	Ensure that Birmingham's workforce is equipped with the skills to access high quality employment opportunities suited to the changing needs of Birmingham's economy whilst recognising the value and contribution of unpaid work?	Population
7. Communities, healthy lifestyles and equality	11. Sense of Place: Encourage land use and development that creates and sustains well-designed, high quality built environments that incorporate green space, encourage biodiversity, and promote local distinctiveness and sense of place.	Improve the satisfaction of a diverse range people with the neighbourhoods where they live?	Population
	19. Social and Environmental Responsibility: Encourage corporate social and environmental responsibility, with local organisations and agencies leading by example.	Encourage local stewardship of local environments, for example enabling communities to improve their neighbourhoods? Encourage good employee relations and management practices? Encourage ethical trading?	Population
	22. Community Involvement: Enable communities to influence the decisions that affect their neighbourhoods and quality of life.	Encourage local stewardship of local environments, for example enabling communities to improve their neighbourhoods? Encourage engagement in community activities for example through the establishment of social and cultural facilities that address the needs of equalities groups? Increase the ability of people to influence decisions?	Population
	23. Equality: Ensure easy and equitable access to services, facilities and opportunities, including jobs and learning.	Promote environmental justice, recognising that deprived areas and disadvantaged communities are more likely to be affected by environmental damage and degradation? Ensure that people are not disadvantaged with regard to ethnicity, gender, age, disability, faith, sexuality, background or location?	Population
	24. Poverty: Address poverty and disadvantage, taking into account the particular difficulties of those facing	Promote environmental justice, recognising that deprived areas and disadvantaged communities are more likely to be affected by environmental damage and degradation?	Population

SA Theme	SA Objectives	Guide Questions for the SA Will the Birmingham Development Plan help to ...	Principal SEA Directive Topic
	multiple disadvantage.	Reduce household poverty, especially the proportion of children living in poor households?	
	25. Health: Improve health and reduce health inequalities by encouraging and enabling healthy active lifestyles and protecting health.	Help provide equitable access to health services? Provide sufficient areas of accessible natural greenspace?	Human health
	26. Crime: Reduce crime, fear of crime and antisocial behaviour.	Reduce crime? Reduce the fear of crime amongst all social and cultural groups?	Population
	28. Culture/Sport/Recreation: Improve opportunities to participate in diverse cultural, sporting and recreational activities.	Encourage participation in sport and cultural activities for all the diverse communities in Birmingham?	Population
8. Housing	27. Housing: Provide decent and affordable housing for all, of the right quantity, type, tenure and affordability to meet local needs.	Reduce homelessness? Increase the range and affordability of housing for all social and cultural I groups? Reduce the number of unfit homes?	Material assets

2.1.3 The Option Appraisal Framework

The framework used to undertake the appraisal is derived from previous appraisal exercises of the Birmingham Development Plan using the following template:

Table 2.2 Appraisal Template

SA Theme/ SA Objectives	Option X	Option Y	Option Z
XXXX	Score		
	Commentary		
	Likelihood/Certainty: Geographical scale: Temporary or Permanent: Timing:	Likelihood/Certainty: Geographical scale: Temporary or Permanent: Timing:	Likelihood/Certainty: Geographical scale: Temporary or Permanent: Timing:

Key to score:

++	Major Positive Impact	+	Positive Impact	0	Neutral Impact;	-	Negative Impact	--	Major Negative Impact	#	No Relationship	?	Uncertain Relationship
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2.1.4 Option Selection

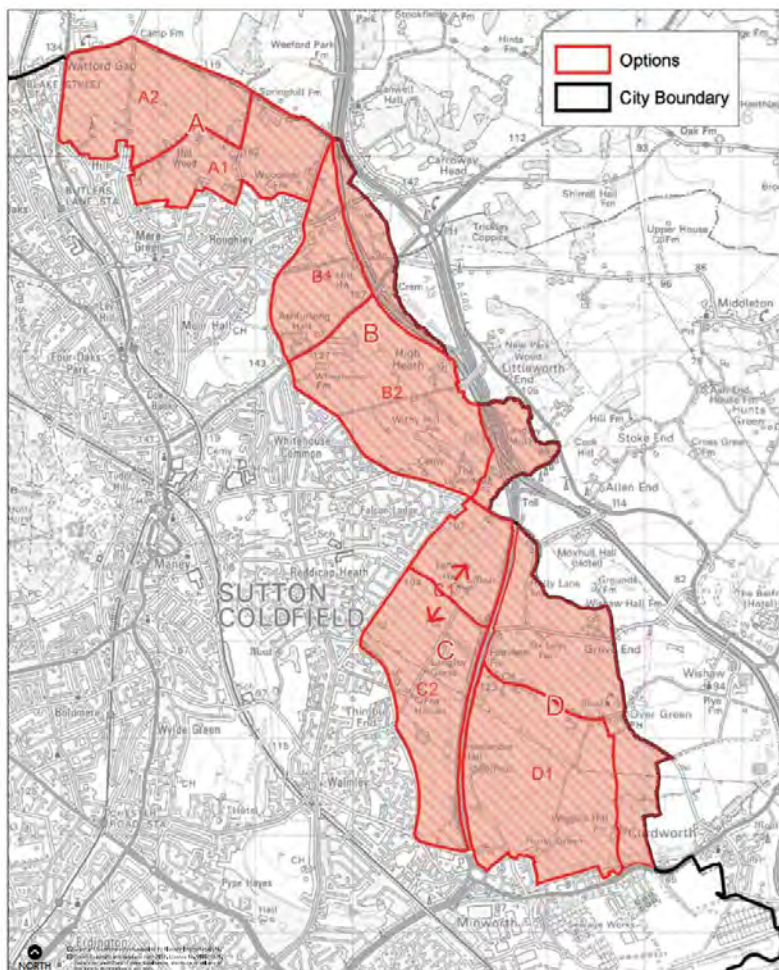
For the purposes of the Sustainability Appraisal, the options to be appraised are:

- Option 1: Do nothing i.e. not seeking to accommodate the additional projected growth.
- Option 2: Accommodate additional projected growth within the existing urban area through higher densities and/or use of green space and employment land.
- Option 3: Strategic Green Belt Release, plus sub-options relating to individual sites, which are:

Birmingham City Council's review of 'Green Belt Options' sets out an appraisal of four areas of possible development (**Figure 2.3**), with various sub-options.

- Area A: Hill Wood, East of Watford Gap (two sub-options).
- Area B: West of the M6 Toll (two sub-options).
- Area C: West of the Sutton Coldfield Bypass, Walmley (two sub-options).
- Area D: East of the Sutton Coldfield Bypass, Walmley.

Figure 2.1 Greenfield Development Options



The appraisal combines both strategic and site-specific considerations using available data drawn from the updated Scoping Report which accompanies this document. Further scrutiny of the sustainability performance of the sites will be required as part of the selection of any preferred site, and the high level analysis is presented here to accompany the planning appraisal.



3. Options Appraisal

3.1 Introduction

The following appraisal sets out the consideration of the relative performance of the options for dealing with the future development of Birmingham. As noted above, at this stage the analysis is relatively high level in character and intended to act as an additional source of information in the evaluation of the options to be considered as part of the preparing the Birmingham Development Plan. The Scoping Report is an important resource in the appraisal, as is a series of maps which identify community facilities and environmental resources in relation to the sites associated with Option 3. These are reproduced in **Appendix C**.

3.1.1 Option 1: Do not accommodate projected additional growth

This option involves using land which has already been identified as holding potential for development through the SHLAA, ELR and other means, to the identified capacity of approximately 45,000 dwellings, with any additional growth provided by neighbouring authorities.

Whilst Option 1 is not considered to be a realistic option in the context of delivering the current Birmingham Development Plan, the Option was the strategy of the Preferred Option Document⁴ and is used as a reference point for the consideration of alternatives which could meet the requirement to provide for the projected growth of the City's population. Key sustainability issues associated with this option centre on the failure to provide for objectively assessed housing and employment needs, which in the context of latest projections, can only be met through additional development to that originally proposed on brownfield land within the current urban area.

3.1.2 Option 2: Accommodate additional projected growth within the urban area

This option entails seeking to accommodate any additional growth within the existing urban area through a combination of increasing urban densities, using open space and using employment land (both existing and potential). In principle, all additional development could be accommodated, but the Options Consultation Document identifies this as not being realistic for reasons of over-intensification, but in the options is a reasonable alternative which merits testing in sustainability terms. The potential sustainability impacts of this option centre on the effects of intensification on open space resources (both in terms of land-take and greater user pressure), use of employment land, and infill development principally in suburban areas. Consequently the effects on quality of life for existing and future residents need to be considered in respect of access to greenspace, pollution and overload of services. In addition, the capacity of the City to create employment through a choice of sites for prospective employers needs to be considered.

⁴ Birmingham City Council (2010) **The Birmingham Plan: Emerging Core Strategy**.

3.1.3 Option 3: Sustainable urban extension

This is a new approach to accommodating additional growth in the City’s jurisdiction and follows the principle of Sustainable Urban Neighbourhoods which characterises the proposed approach to new development within the existing urban area. Any extension(s) will need to use greenfield land and push the urban edge further toward the City’s boundary to the east of Sutton Coldfield. As identified in section 2.1.4, there are a number sub-options associated with the application of this approach where alternative land parcels need to be tested for their planning and sustainability performance. Key sustainability issues centre on the scale of greenfield land-take, opportunities for the development of relatively self-contained communities which also have the potential for connections to existing communities (in terms of jobs, service provision and identity) and present opportunities to make a genuine contribution to sustainability measures such as improving green infrastructure, sustainable travel opportunities, renewable energy and waste management facilities. Equally, meeting the needs of existing residents for affordable homes and job opportunities needs to be part of the consideration of their function.

3.2 Comparative Appraisal

The scoring of the three options and associated commentary is presented in **Table 3.1**. This is based on professional judgement of the likely impacts of the option in relation to the groupings of the SA Objectives, as set out in **Table 2.1**.

This analysis draws on the previous appraisal findings, the updated SA Scoping Report, the Green Belt Options Paper⁵ and mapping of service provision and environmental constraints in the vicinity of the greenfield development options (see **Appendix C**). An appraisal of the sustainability performance of individual greenfield sub-options (Sites A, B, C and D) is set out in **Appendix B**.

Key to score:

++	Major Positive Impact	+	Positive Impact	0	Neutral Impact;	-	Negative Impact	--	Major Negative Impact	#	No Relationship	?	Uncertain Relationship
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⁵ Birmingham City Council (2012) **Birmingham’s Green Belt Options**.

Table 3.1 Comparative Appraisal of the Performance of the Options

SA Theme/SA Objectives	Option 1: Do not accommodate additional projected growth	Option 2: Accommodate additional projected growth within the urban area	Option 3: Sustainable Urban Extension
NATURAL RESOURCES AND WASTE	0	-	0
<p>1. Resource Use: Use natural resources such as water and minerals efficiently.</p> <p>7. Waste Reduction and Minimisation: Encourage and enable waste minimisation, reuse, recycling and recovery.</p> <p>8. Efficient use of land: Encourage land use and development that optimises the use of previously developed land and buildings.</p>	<p>Significant positive effects: Opportunities to make efficient use of available land and through SUNs maximise sustainable waste management.</p> <p>Significant negative effects: Pressure on the natural resources of adjacent authorities in accommodating deflected housing pressures.</p> <p>Overall: There are likely to be beneficial effects associated with the efficient use of land (particularly previously developed land) and opportunities for recycling, although there are likely to be negative cross-boundary effects associated with adjacent authorities accommodating additional development.</p>	<p>Significant positive effects: Opportunities to make efficient use of available land to maximise sustainable waste management.</p> <p>Significant negative effects: Compromising of the integrity of natural resources across the City associated with open space.</p> <p>Overall: There are likely to be beneficial effects associated with the efficient use of land (particularly previously developed land) although there is likely to be pressure to build on open space resources and employment land. Facility capacity could also be an issue, depending upon where development is able to be accommodated.</p>	<p>Significant positive effects: There are opportunities associated with growth of this scale to make efficiencies in the use of land which balances housing and green infrastructure provision, for example.</p> <p>Significant negative effects: This option uses tracts of greenfield land, which is part of the little remaining within Birmingham's jurisdiction.</p> <p>Overall: Use of greenfield land, but opportunities for integrating development with the existing urban edge for large-scale recycling facilities, for example.</p>
	<p>Likelihood/Certainty: highly likely to be realised, if the option is taken forward.</p> <p>Geographical scale: effects likely across the City and across the wider sub-region.</p> <p>Temporary or Permanent: permanent.</p> <p>Timing: medium to long term</p>	<p>Likelihood/Certainty: highly likely to be realised, if option is taken forward.</p> <p>Geographical scale: effects likely across the City and adjacent areas.</p> <p>Temporary or Permanent: permanent, subject to effective implementation</p> <p>Timing: medium to long term</p>	<p>Likelihood/Certainty: highly likely to be realised, both positively and negatively, if the option is taken forward.</p> <p>Geographical scale: localised but enables City growth.</p> <p>Temporary or Permanent: permanent, subject to effective implementation</p> <p>Timing: medium to long term</p>
CO2 EMISSIONS	+	+/?	+/?
<p>2. Sustainable design, construction and maintenance: Promote and ensure high standards of sustainable resource-efficient design, construction and maintenance of buildings, where possible exceeding the requirements of the Building Regulations.</p> <p>3. Renewable Energy: Encourage development of alternative and</p>	<p>Significant positive effects: Opportunities to maximise sustainable transport associated with SUNs and the development of a compact city.</p> <p>Significant negative effects: Possible increase in overall CO2 emissions associated with intensification of built development and increasing in commuting</p>	<p>Significant positive effects: Opportunities to maximise sustainable transport associated with the development of a compact city.</p> <p>Significant negative effects: Possible increase in overall CO2 emissions associated with the intensification of built development.</p>	<p>Significant positive effects: There is the opportunity, through good design, to significantly reduce CO2 emissions which would normally be associated with a development of this scale. Community-wide energy schemes and green travel plans could be considered, for example.</p> <p>Significant negative effects: Overall CO₂</p>

SA Theme/SA Objectives	Option 1: Do not accommodate additional projected growth	Option 2: Accommodate additional projected growth within the urban area	Option 3: Sustainable Urban Extension
<p>renewable resources.</p> <p>4. Energy Efficiency: Reduce overall energy use through energy efficiency.</p> <p>5. Sustainable Transport: Increase use of public transport, cycling and walking as a proportion of total travel and ensure development is primarily focused in the major urban areas, making efficient use of existing physical transport infrastructure.</p> <p>6. Reduce the need to travel: Ensure development reduces the need to travel.</p> <p>9. Reduce climate change: Minimise Birmingham’s contribution to the causes of climate change by reducing emissions of greenhouse gases from transport, domestic, commercial and industrial sources.</p>	<p>as development is deflected to adjacent areas.</p> <p>Overall: This option seeks to focus on the use of Sustainable Urban Neighbourhoods to promote compact urban form, reducing the need to travel and promoting innovation in the use of community-scale heating networks, for example. Reduction in CO2 emissions is an expected output from this approach to development.</p> <p>Likelihood/Certainty: highly likely to be realised, if the option is taken forward.</p> <p>Geographical scale: effects likely across the City.</p> <p>Temporary or Permanent: permanent.</p> <p>Timing: medium to long term</p>	<p>Overall: This option could reduce the need to travel and promoting innovation in the use of community-scale heating networks, for example. Whilst a reduction in CO2 emissions is an expected output from this approach to development, over-concentration of development could lead to congestion and increased emissions.</p> <p>Likelihood/Certainty: uncertainty whether over-intensification could produce unacceptable levels of pollution.</p> <p>Geographical scale: effects likely across the City and adjacent areas.</p> <p>Temporary or Permanent: permanent, subject to effective implementation</p> <p>Timing: medium to long term</p>	<p>emissions will increase, associated with additional road traffic and energy use.</p> <p>Overall: This option presents opportunities to develop energy efficiency measures at a community scale, but these could be undermined by car-based travel from the periphery. Much depends on the balance between self-containment of the new community and relationship with the existing urban edge.</p> <p>Likelihood/Certainty: highly likely to be realised, both positively and negatively, if the option is taken forward.</p> <p>Geographical scale: localised</p> <p>Temporary or Permanent: permanent, subject to effective implementation</p> <p>Timing: medium to long term</p>
<p>CLIMATE CHANGE ADAPTATION</p> <p>10. Manage Climate Change: Implement a managed response to the unavoidable impacts of climate change, ensuring that the design and planning process takes into account predicted changes in Birmingham’s climate including flood risk.</p>	<p style="text-align: center;">+</p> <p>Significant positive effects: Through SUNs, opportunities to anticipate climate change through city greening and building design, for example.</p> <p>Significant negative effects: Possible compromising of the City’s ability to adapt to the effects of climate change because of the intensification of development.</p> <p>Overall: Opportunities to mitigate impacts through design</p> <p>Likelihood/Certainty: likely to be realised</p> <p>Geographical scale: Effects likely across the City</p> <p>Temporary or Permanent: Permanent, subject to effective implementation</p> <p>Timing: Medium to long term</p>	<p style="text-align: center;">+</p> <p>Significant positive effects: Opportunities to anticipate climate change through city greening and building design, for example.</p> <p>Significant negative effects: Possible compromising of the City’s ability to adapt to the effects of climate change because of the intensification of development.</p> <p>Overall: Opportunities to mitigate impacts through design</p> <p>Likelihood/Certainty: likely to be realised</p> <p>Geographical scale: Effects likely across the City</p> <p>Temporary or Permanent: Permanent, subject to effective implementation</p> <p>Timing: Medium to long term</p>	<p style="text-align: center;">+</p> <p>Significant positive effects: Opportunities to design in climate change adaptation measures such as SUDS.</p> <p>Significant negative effects: Limited contribution to managing Birmingham’s adaptability to climate change as a whole.</p> <p>Overall: Opportunities to mitigate impacts through design</p> <p>Likelihood/Certainty: likely to be realised</p> <p>Geographical scale: Localised</p> <p>Temporary or Permanent: Permanent, subject to effective implementation</p> <p>Timing: Medium to long term</p>

SA Theme/SA Objectives	Option 1: Do not accommodate additional projected growth	Option 2: Accommodate additional projected growth within the urban area	Option 3: Sustainable Urban Extension
<p>HISTORIC ENVIRONMENT, LANDSCAPE, BIODIVERSITY & GEODIVERSITY</p> <p>12. Built and Historic Environment: Value, protect, enhance and restore Birmingham's built and historic environment and landscape.</p> <p>13. Natural Landscape: Value, protect, enhance and restore Birmingham's natural landscape.</p> <p>14. Biodiversity: Value, protect, maintain, restore and re-create local biodiversity and geodiversity.</p>	+	-/?	0
	<p>Significant positive effects: Opportunities to enhance existing natural and cultural assets through city greening and strengthening of local identity.</p> <p>Significant negative effects: Pressure on the natural and cultural resources of adjacent authorities in accommodating deflected housing pressures.</p> <p>Overall: Use of existing developed land will protect existing cultural resources and provide opportunities for their enhancement associated with neighbourhood development.</p>	<p>Significant positive effects: Opportunities to enhance existing natural and cultural assets through city greening and strengthening of local identity.</p> <p>Significant negative effects: Compromising of the integrity of natural and cultural resources across the City associated with the development of open space.</p> <p>Overall: There is likely to be significant additional pressure on natural and cultural assets associated with seeking to accommodate additional development on areas such as open space. However, the extent of the impact would require additional as would opportunities for mitigation.</p>	<p>Significant positive effects: Opportunity to systematically enhance some environmental resources through green infrastructure provision.</p> <p>Significant negative effects: Permanent loss of some environmental and cultural resources.</p> <p>Overall: Greenfield development is likely to lead to loss of habitat and landscape character, but there is the opportunity, through green infrastructure, to provide for biodiversity and landscape enhancement.</p>
<p>POLLUTION</p> <p>15. Air Quality: Minimise air pollution levels and create good quality air.</p> <p>16. Water Quality: Minimise water pollution levels and create good quality water.</p> <p>17. Soil Quality: Minimise soil pollution levels and create good quality soil.</p> <p>18. Noise: Minimise noise pollution levels.</p>	+	-	0
<p>Significant positive effects: More efficient use of resources through SUNs.</p> <p>Significant negative effects: Pressure on adjacent authorities to provide housing puts pressure on their resources and could result in increased commuting.</p> <p>Overall: This option seeks to focus on the use of Sustainable Urban Neighbourhoods to promote compact urban form, reducing the need to travel and improving air quality and noise emissions. Deflected</p>	<p>Significant positive effects: More efficient use of resources through SUNs approach to urban development.</p> <p>Significant negative effects: Greater pollution load associated with urban intensification.</p> <p>Overall: This option seeks to focus on the use of Sustainable Urban Neighbourhoods to promote compact urban form, reducing the need to travel. However, over-concentration of development could lead to</p>	<p>Significant positive effects: Opportunities to move towards greater sustainable transport provision, for example in cycle networks etc.</p> <p>Significant negative effects: Additional burdens on air quality and noise associated with the significant level of new development.</p> <p>Overall: Although car-based travel from this peripheral location is likely to exacerbate air and noise pollution much</p>	

SA Theme/SA Objectives	Option 1: Do not accommodate additional projected growth	Option 2: Accommodate additional projected growth within the urban area	Option 3: Sustainable Urban Extension
	<p>development could compromise environmental quality of adjacent areas, however.</p> <p>Likelihood/Certainty: highly likely to be realised, if the option is taken forward.</p> <p>Geographical scale: effects likely across the City.</p> <p>Temporary or Permanent: permanent.</p> <p>Timing: medium to long term</p>	<p>congestion and increased emissions.</p> <p>Likelihood/Certainty: uncertainty over whether and how intensification might lead to additional pollution.</p> <p>Geographical scale: effects likely across the City and adjacent areas.</p> <p>Temporary or Permanent: permanent, subject to effective implementation</p> <p>Timing: medium to long term</p>	<p>depends on the balance between self-containment of the new community and relationship with the existing urban edge.</p> <p>Likelihood/Certainty: uncertainty over the degree of self-containment realised by new development.</p> <p>Geographical scale: localised</p> <p>Temporary or Permanent: permanent, subject to effective implementation</p> <p>Timing: medium to long term</p>
<p>ECONOMIC GROWTH</p> <p>20. Economy and Equality: Achieve a strong, stable and sustainable economy and prosperity for the benefit of all of Birmingham’s inhabitants.</p> <p>21. Learning and Skills: Promote investment in future prosperity, including ongoing investment and engagement in learning and skills development.</p>	<p style="text-align: center;">0</p> <p>Significant positive effects: Through SUNs, there are opportunities to focus on development of indigenous economic growth which benefits all sectors of the population.</p> <p>Significant negative effects: Restricted opportunities for Birmingham’s population to benefit from economic growth as development is deflected to other locations in the sub-region.</p> <p>Overall: Development focused on Sustainable Urban Neighbourhoods should help to foster indigenous economic growth which matches skills to opportunities, but the opportunities to accommodate inward investment could be limited.</p> <p>Likelihood/Certainty: highly likely to be realised</p> <p>Geographical scale: Effects likely across the City and wider sub-region</p> <p>Temporary or Permanent: Permanent, subject to effective implementation</p> <p>Timing: Medium to long term</p>	<p style="text-align: center;">-</p> <p>Significant positive effects: Opportunities to focus on development of indigenous economic growth which benefits all sectors of the population.</p> <p>Significant negative effects: Use of employment land for housing, resulting in a loss of flexibility for future economic growth.</p> <p>Overall: Whilst focusing development on the City could lead to greater indigenous economic activity, loss of employment land is likely, reducing the ability of the City to respond to economic opportunities.</p> <p>Likelihood/Certainty: highly likely to be realised</p> <p>Geographical scale: Effects likely across the City and wider sub- region</p> <p>Temporary or Permanent: Permanent, subject to effective implementation</p> <p>Timing: Medium to long term</p>	<p style="text-align: center;">+/?</p> <p>Significant positive effects: Provision of significant employment land and hence job and training opportunities for existing and new residents.</p> <p>Significant negative effects: Potential to attract re-locating businesses from Birmingham rather than from outside the City.</p> <p>Overall: Whilst development could involve the provision of additional employment land, there is uncertainty of the extent to which jobs can be linked to the needs of new residents, or will generate increased commuting into this peripheral location.</p> <p>Likelihood/Certainty: uncertainty over the balance of indigenous economic growth and re-locations from within and outside the City.</p> <p>Geographical scale: Localised but of relevance to the wider City</p> <p>Temporary or Permanent: Permanent, subject to effective implementation</p> <p>Timing: Medium to long term</p>

SA Theme/SA Objectives	Option 1: Do not accommodate additional projected growth	Option 2: Accommodate additional projected growth within the urban area	Option 3: Sustainable Urban Extension
<p>COMMUNITIES, HEALTHY LIFESTYLES, AND EQUALITY</p> <p>11. Sense of Place: Encourage land use and development that creates and sustains well-designed, high quality built environments that incorporate green space, encourage biodiversity, and promote local distinctiveness and sense of place.</p> <p>19. Social and Environmental Responsibility: Encourage corporate social and environmental responsibility, with local organisations and agencies leading by example.</p> <p>22. Community Involvement: Enable communities to influence the decisions that affect their neighbourhoods and quality of life.</p> <p>23. Equality: Ensure easy and equitable access to services, facilities and opportunities, including jobs and learning.</p> <p>24. Poverty: Address poverty and disadvantage, taking into account the particular difficulties of those facing multiple disadvantage.</p> <p>25. Health: Improve health and reduce health inequalities by encouraging and enabling healthy active lifestyles and protecting health.</p> <p>26. Crime: Reduce crime, fear of crime and antisocial behaviour.</p> <p>28. Culture/Sport/Recreation: Improve opportunities to participate in diverse cultural, sporting and recreational activities.</p>	<p style="text-align: center;">0/?</p> <p>Significant positive effects: The creation of Sustainable Urban Neighbourhoods should make a significant contribution towards achieving aspirations for growth whilst not compromising the quality of what already exists.</p> <p>Significant negative effects: The level of growth required cannot be provided for through using developed land within the existing built-up area meaning that the aspirations for equality of access to homes and jobs are unlikely to be achieved.</p> <p>Overall: Through Sustainable Urban Neighbourhoods, there is the opportunity to enhance sense of place and access to key services.</p>	<p style="text-align: center;">-</p> <p>Significant positive effects: Additional service provision associated with higher population densities.</p> <p>Significant negative effects: It is uncertain whether the range of community needs can be provided for on land which cannot be well-related to existing communities. There will be a compromising of quality of life through loss of greenspace and over-intensification of the urban area.</p> <p>Overall: There is a danger of a loss of character and facilities such as open space associated with over-intensification of development across the City.</p>	<p style="text-align: center;">+/?</p> <p>Significant positive effects: Significant opportunities for the development of a relatively self-contained community which complements existing service provision in and around Sutton Coldfield.</p> <p>Significant negative effects: Potential impacts on existing service provision, particularly open space. Access to rail and bus services is relatively poor. Challenges associated with creating a sense of place.</p> <p>Overall: Whilst a sustainable urban extension would seek a reasonable degree of self-containment, there is uncertainty over how this might work in practice. Careful integration with existing communities would be required.</p>
	<p>Likelihood/Certainty: highly likely to be realised</p> <p>Geographical scale: Effects likely across the City</p> <p>Temporary or Permanent: Permanent, subject to effective implementation</p> <p>Timing: Medium to long term</p>	<p>Likelihood/Certainty: uncertainty associated with the precisely which communities could be affected and in what respects.</p> <p>Geographical scale: Effects likely across the City</p> <p>Temporary or Permanent: Permanent,</p> <p>Timing: Medium to long term</p>	<p>Likelihood/Certainty: uncertainty over how quality of life aspirations might be achieved.</p> <p>Geographical scale: Localised</p> <p>Temporary or Permanent: Permanent, subject to effective implementation</p> <p>Timing: Medium to long term</p>
<p>HOUSING</p> <p>27. Housing: Provide decent and affordable housing for all, of the right quantity, type, tenure and affordability to</p>	<p style="text-align: center;">-</p> <p>Significant positive effects: The creation of Sustainable Urban Neighbourhoods should make a significant contribution</p>	<p style="text-align: center;">0/?</p> <p>Significant positive effects: The creation of Sustainable Urban Neighbourhoods should make a significant contribution</p>	<p style="text-align: center;">+/?</p> <p>Significant positive effects: Provision of a significant quantum of housing to meet growth needs, part of which will be</p>

SA Theme/SA Objectives	Option 1: Do not accommodate additional projected growth	Option 2: Accommodate additional projected growth within the urban area	Option 3: Sustainable Urban Extension
meet local needs.	<p>towards achieving aspirations for growth whilst not compromising the quality of what already exists.</p> <p>Significant negative effects: The level of growth required cannot be provided for through using developed land within the existing built-up area meaning that the aspirations for equality of access to homes and jobs are unlikely to be achieved. There is also likely to be greater pressure on adjacent authorities to provide for Birmingham's housing needs.</p> <p>Overall: This option could not provide for the demands associated with the City's housing needs. Increased pressure on adjacent areas to accommodate this need will result.</p>	<p>towards achieving aspirations for growth whilst not compromising the quality of what already exists.</p> <p>Significant negative effects: It is uncertain whether the range of community needs can be provided for on land which cannot be well-related to existing communities.</p> <p>Overall: Whilst providing additional housing, there could be uncertainties over whether specific demands can be met for a range of housing because of the constraints imposed by finding additional land.</p>	<p>affordable.</p> <p>Significant negative effects: Uncertain benefits to local communities across the City in need of additional affordable provision.</p> <p>Overall: Whilst providing additional housing, there could be uncertainties over whether specific demands can be met for a range of housing because of the location of the development.</p>
	<p>Likelihood/Certainty: highly likely to be realised</p> <p>Geographical scale: Effects likely across the City and wider sub-region</p> <p>Temporary or Permanent: Permanent,</p> <p>Timing: Medium to long term</p>	<p>Likelihood/Certainty: uncertainties over meeting affordable housing provision related to local needs.</p> <p>Geographical scale: Effects likely across the City</p> <p>Temporary or Permanent: Permanent</p> <p>Timing: Medium to long term</p>	<p>Likelihood/Certainty: uncertainty over affordable housing provision related to local needs.</p> <p>Geographical scale: Effects likely across the City</p> <p>Temporary or Permanent: Permanent, subject to effective implementation</p> <p>Timing: Medium to long term</p>

3.3 Summary of Appraisal Findings

The preceding analysis has identified a wide range of potential sustainability effects associated with each option. Drawing on **Table 3.1**, **Table 3.2** and **Appendix B**, compares each option (and sub-option) directly in respect of likely environmental, economic and social effects. These highlight the principal issues (at this stage at a high level), but sets out where further study of service provision could be required to fully evaluate the effects of specific potential urban extensions.

Table 3.2 Cumulative Environmental, Economic and Social Effects by Option

Option		Likely Cumulative Environmental Effects	Likely Cumulative Economic Effects	Likely Cumulative Social Effects
1. Do not accommodate additional projected growth		Efficient use of existing land resources, with opportunities to enhance existing urban environment associated with SUN approach.	Opportunities for growth could be missed through lack of additional employment land being allocated.	No provision for additional housing, leading to lack of housing opportunities and additional pressure on adjoining areas.
2. Accommodate additional projected growth within the existing urban area		As above, but loss/compromising of assets such as open space and cultural heritage resources.	Potential loss of employment land leading to reduced capacity to respond to future growth. Loss of economic opportunities to adjacent areas.	Potential over-burdening of services and transport network, although this would be location-specific. Decline in overall quality of life is likely.
3. Allocate land for an urban extension	Area A: Hill Wood, East of Watford Gap	Greenfield land-take, and potential increases in emissions associated with car-based travel, associated both with the development and from outside. Sites of Local Interest for Nature Conservation and cultural heritage affected.	Additional employment land, either as part of a mixed use development or stand-alone will provide opportunities for existing residents in adjacent areas, and the potential for future economic growth of the City.	Service provision clustered at Mere Green (including health services, shops and schools) could provide the basis for complementary provision at this location. Butlers Lane railway station, for example, could provide a focus for sustainable travel to Sutton Coldfield, Birmingham and Lichfield. Supplementing the currently limited open space provision in the vicinity would demand particular attention as part of any development.
	Area B: West of the M6 Toll	Greenfield land-take, and potential increases in emissions associated with car-based travel, associated both with the development and from outside. Flood risk associated with part of the site. Sites of Importance for Nature Conservation and Sites of Local Interest for Nature Conservation and cultural heritage affected.	Additional employment land, either as part of a mixed use development or stand-alone will provide opportunities for existing residents in adjacent areas, and the potential for future economic growth of the City.	Service provision clustered at Mere Green, Sutton Coldfield and Reddicap Heath (including health services, shops and schools) could provide the basis for complementary provision at this location. Four Oaks and Sutton Coldfield railway stations lie approximately 2km to the west but could be focal points for sustainable travel. Open space provision in the vicinity is reasonable (Sutton Park for example) but would demand particular attention as part of any development.
	Area C: West of	Greenfield land-take, and potential increases in	Additional employment land, either as part of a mixed use	Bounded by the existing urban edge and the A38, this area has

Option		Likely Cumulative Environmental Effects	Likely Cumulative Economic Effects	Likely Cumulative Social Effects
	the Sutton Coldfield Bypass, Walmley	emissions associated with car-based travel, associated both with the development and from outside. Flood risk associated with part of the site. Sites of Local Interest for Nature Conservation and cultural heritage affected.	development or stand-alone will provide opportunities for existing residents in adjacent areas, and the potential for future economic growth of the City.	access to a range of services at Reddip Heath and Walmley which could provide the basis for complementary provision at this location. Rail access is via Sutton Coldfield station at around 2.5km. Open space provision in the vicinity is reasonable but would demand particular attention as part of any development.
	Area D: East of the Sutton Coldfield Bypass, Walmley	Greenfield land-take, and potential increases in emissions associated with car-based travel, associated both with the development and from outside. Sites of Local Interest for Nature Conservation and cultural heritage affected.	Additional employment land, either as part of a mixed use development or stand-alone will provide opportunities for existing residents in adjacent areas, and the potential for future economic growth of the City.	This area is relatively remote from service provision to the west (by distance and severance by the A38), although there is some provision (retail and schools) to the south at Minworth. Rail access is a around 4km distant at Sutton Coldfield. Open space provision in the vicinity is limited and would demand particular attention as part of any development.

The various effects associated with each option presents dilemmas in the selection of a preferred solution to the demands for growth of the City associated with projected population increase. The baseline strategy of accommodating growth within the existing urban envelope using SUNs as the focus for development remains, but needs to be modified through additional land allocation. Option 2, which is likely to result in over-intensification of the existing urban area threatens not only quality of life (notably through the erosion of limited open space resources and over-burdening of services), but also the capacity of the City to respond to future economic growth where employment land is used for housing. The appraisal concludes that, notwithstanding issues associated with loss of greenfield land and effects on nature conservation and cultural heritage, a sustainable urban extension on land to the north east of the City presents a relatively sustainable solution to accommodating the additional housing required.

In many respects, there is relatively little difference between the environmental, economic and social effects associated with sub-options A, B, C and D. Much would depend on the opportunities for additional and complementary service provision and hence relative self-containment through a significant development of 5-10,000 units. In this regard, Options B and C probably present the greatest potential given their ready access to existing services in the vicinity of Sutton Coldfield. However, there is relatively little to choose, at this stage, between the merits of Options A, B and C. The relative remoteness of area D means that its sustainability qualities are relatively poor, compared to Options A, B and C. Whether a single site or multiple sites (either within Options or between them) represents the best planning solution is dependent upon a range of factors, notably transport infrastructure and the capacity of existing services such as schools. More detailed transport and service capacity modelling, would be required to appraise these impacts.

4. Conclusions and Next Steps

This SA has explored three options available to Birmingham City Council to deliver development land associated with projected growth to 2031. In the context of the physical constraints of the City these are limited with the only realistic solution being to deliver a sustainable urban extension (or multiples thereof) on part of the remaining greenfield land within the City boundary. Under the Duty to Co-operate, some of the additional growth demand can be accommodated by adjoining areas, notably the Black Country and Solihull, but the residual requirement (i.e. around 10,000 homes) demands significant further land-take.

This SA has identified that the urban extension option could represent a reasonable compromise if of a sufficient scale and carefully integrated with the existing urban edge, both physically and in terms of service provision. The precise physical disposition of such development would need to be explored in greater detail (exploring the capacity of road systems and services, for example), but in principle, the objectives of sustainability are probably better achieved through a single development which provides a critical mass for the provision of services and green infrastructure, for example, which would promote a relatively high degree of self-containment. The approach is not without potential risks which would need to be mitigated, including anticipating issues regarding cross-commuting to and from employment areas, and the long-term integration of any extension into the existing urban fabric and adjoining rural area.

This SA will be developed in light of further work on a preferred approach to accommodating anticipated growth in Birmingham. This could include, for example, a hybrid approach which uses elements from all three options evaluated in this document. Part of this work will need to include detailed modelling of transport impacts, for example.

4.1 Quality Assurance Checklist

SEA Directive requirement	Where covered in the SA Report
Preparation of an environmental report in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and geographical scope of the plan or programme, are identified, described and evaluated.	This Report and predecessors
a) An outline of the contents, main objectives of the plan or programme, and relationship with other relevant plans and programmes.	Chapter 1 and updated Scoping Report
b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.	Sustainability issues facing the City (section 2.2.1) See also baseline data published in the Scoping Report and the previous Interim Sustainability Report (November 2010)
c) The environmental characteristics of areas likely to be significantly affected.	Sustainability issues facing the City (section 2.2.1)

SEA Directive requirement	Where covered in the SA Report
d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC.	Sustainability issues facing the City (section 2.2.1)
e) The environmental protection objectives established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental, considerations have been taken into account during its preparation.	Scoping Report (January 2008, July 2010, October 2012)
f) The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors. (Footnote: These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects).	Analysis of significant effects (Table 3.1)
g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme.	Appraisal of significant effects (Tables 3.1 and 3.2)
h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.	Methodology (chapter 1) Appraisal of plan options (chapter 3) Uncertainties (section 1.4)
i) A description of measures envisaged concerning monitoring in accordance with Art. 10.	Not relevant at this stage
j) A non-technical summary of the information provided under the above headings.	Non-technical summary
The report shall include the information that may reasonably be required taking into account current knowledge and methods of assessment, the contents and level of detail in the plan or programme, its stage in the decision-making process and the extent to which certain matters are more appropriately assessed at different levels in that process to avoid duplication of the assessment (Art. 5.2).	This Report



Appendix A

Stages of the SA/SEA Process

Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope

A1: Identifying other relevant policies, plans and programmes, and sustainability objectives; A2: Collecting baseline information; A3: Identifying sustainability issues and problems; A4: Developing the SA framework; A5: Consulting on the scope of the SA.

Stage B: Developing and Refining Options and Assessing Effects

B1: Testing the DPD objectives against the SA framework; B2: Developing the DPD options; B3: Predicting the effects the DPD; B4: Evaluating the effects of the DPD; B5: Considering ways of mitigating adverse effects and maximising beneficial effects; B6: Proposing measures to monitor the significant effects of implementing the DPDs.

Stage C: Preparing the Sustainability Appraisal Report

C1: Preparing the SA Report

Stage D: Examination

D1: Public participation on the preferred options of the DPD and the SA Report; D2(i): Appraising significant changes; D2(ii): Appraising significant changes resulting from representations; D3: Making decisions and providing information.

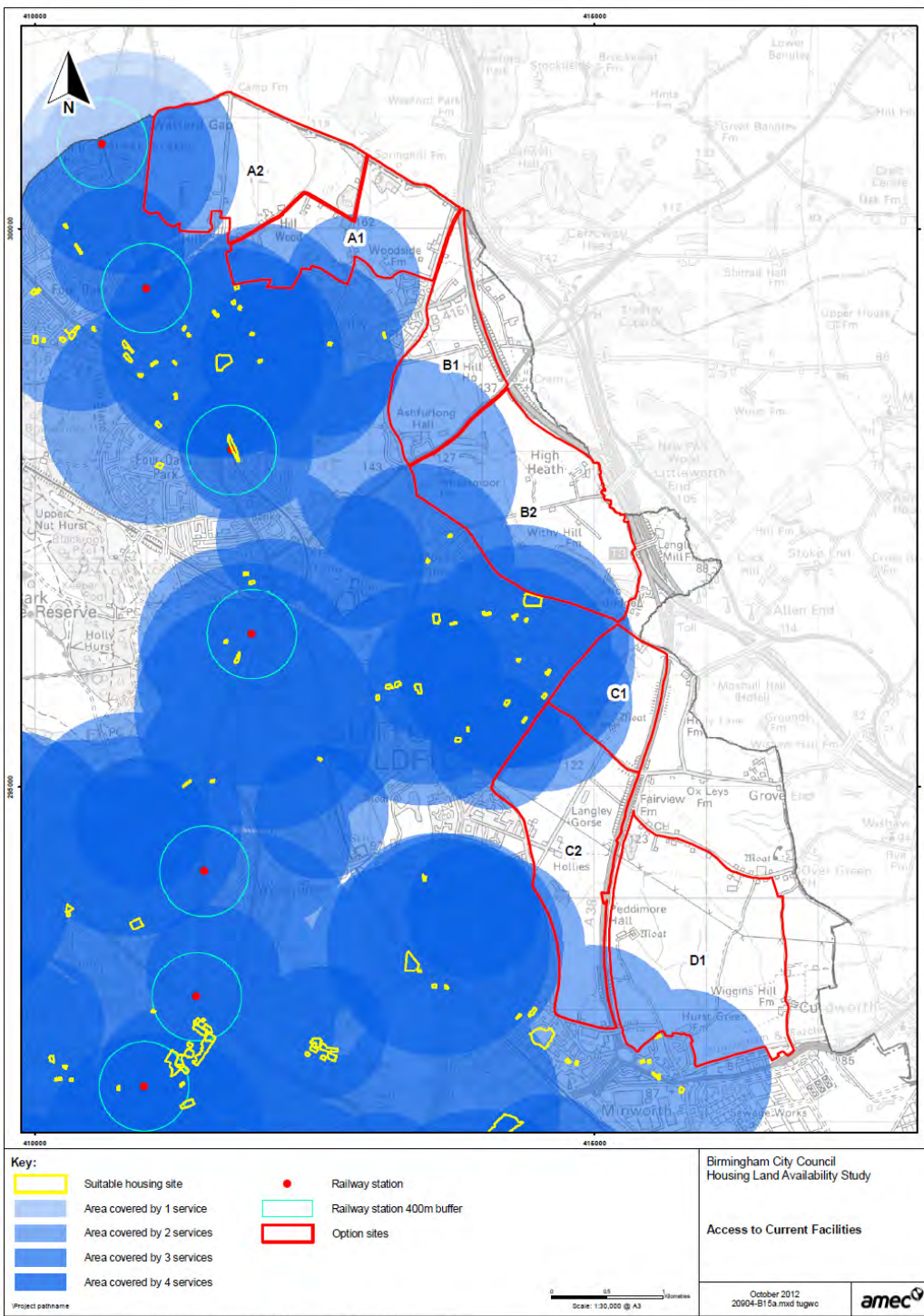
Stage E: Monitoring the significant effects of implementing the Plan

E1: Finalising aims and methods for monitoring; E2: Responding to adverse effects.

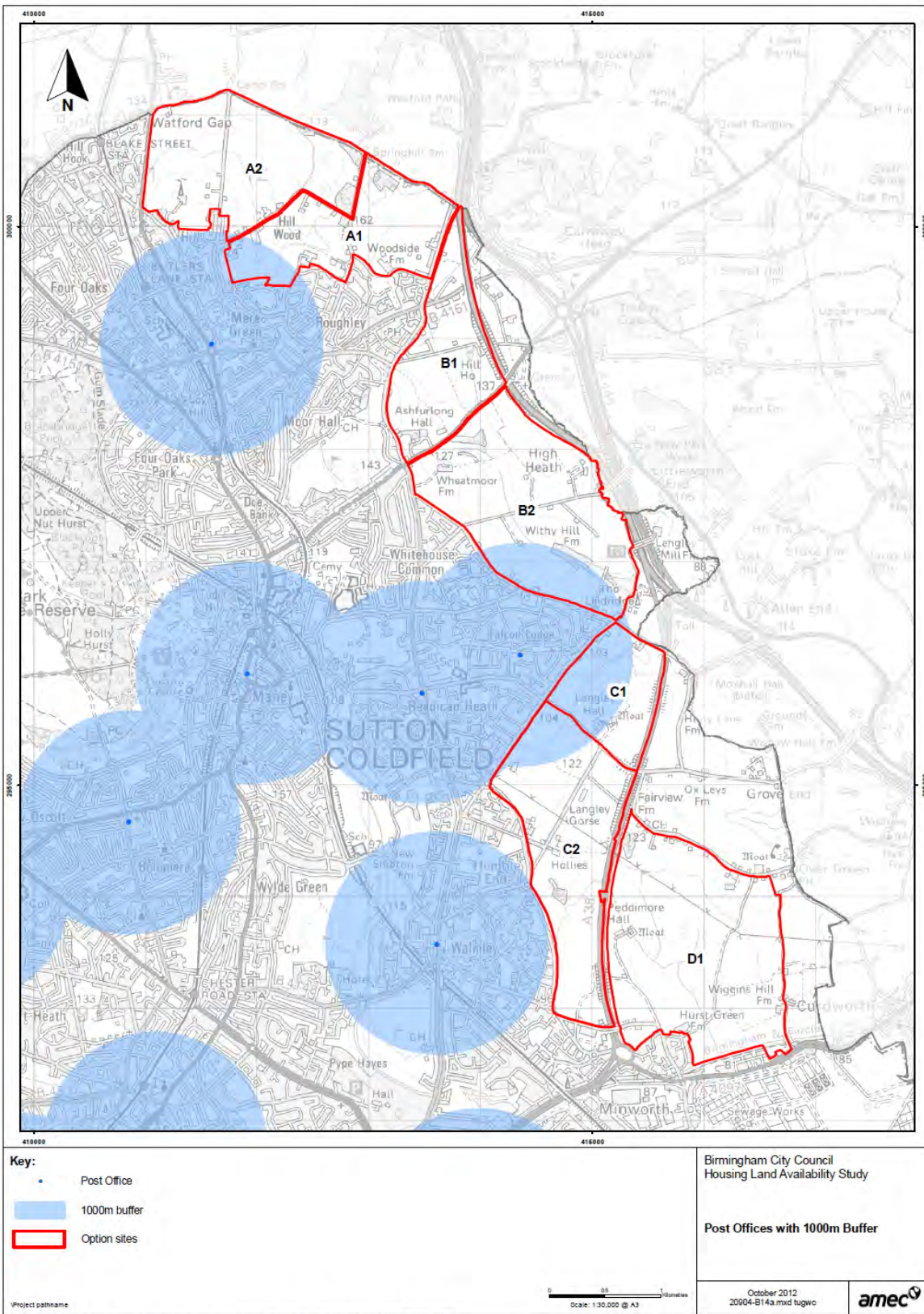


Appendix B Facilities and Resources in the Vicinity of the Sub-options

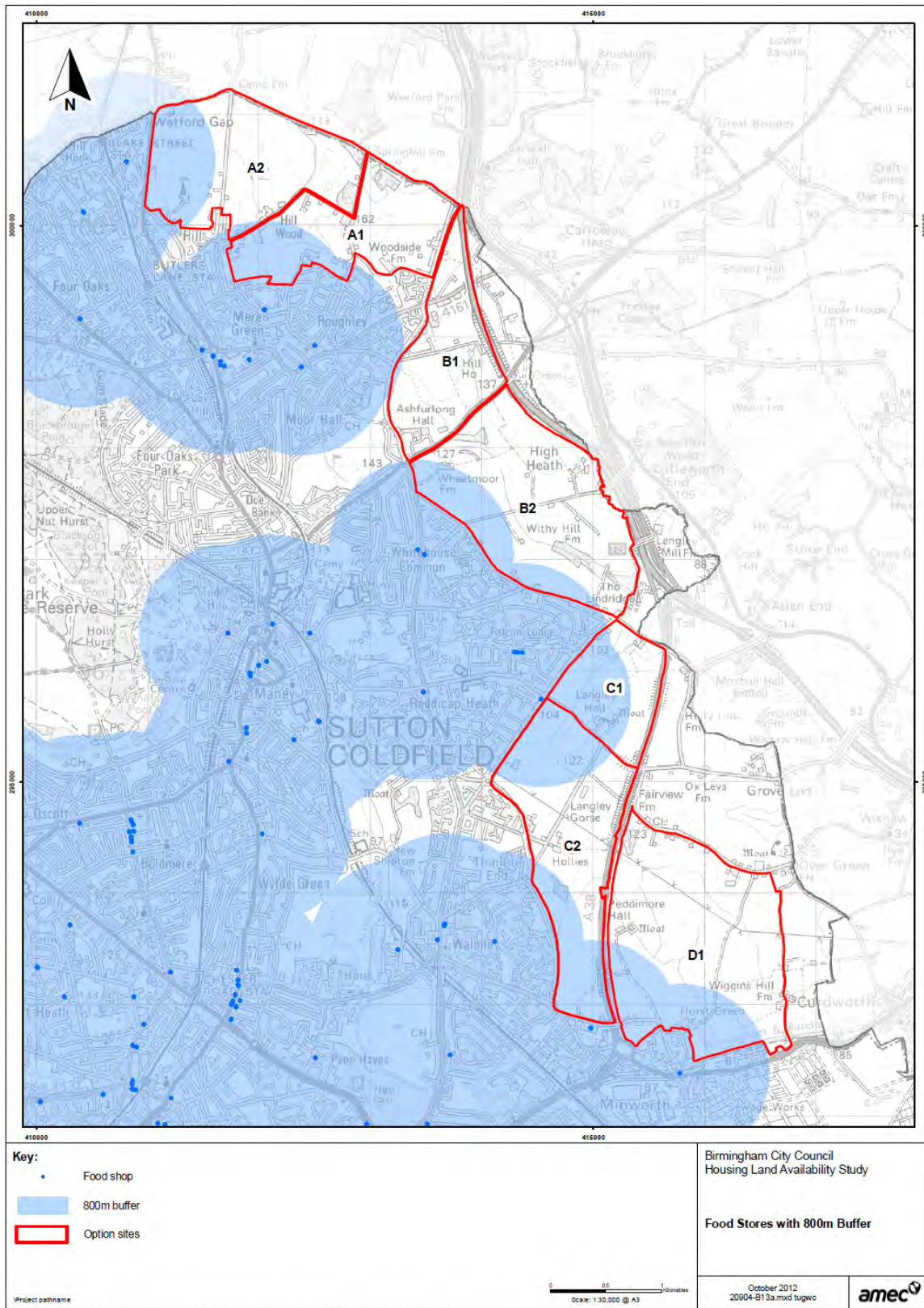
Compilation of Access to all Facilities (Post Offices, Schools, Food Stores, Healthcare)



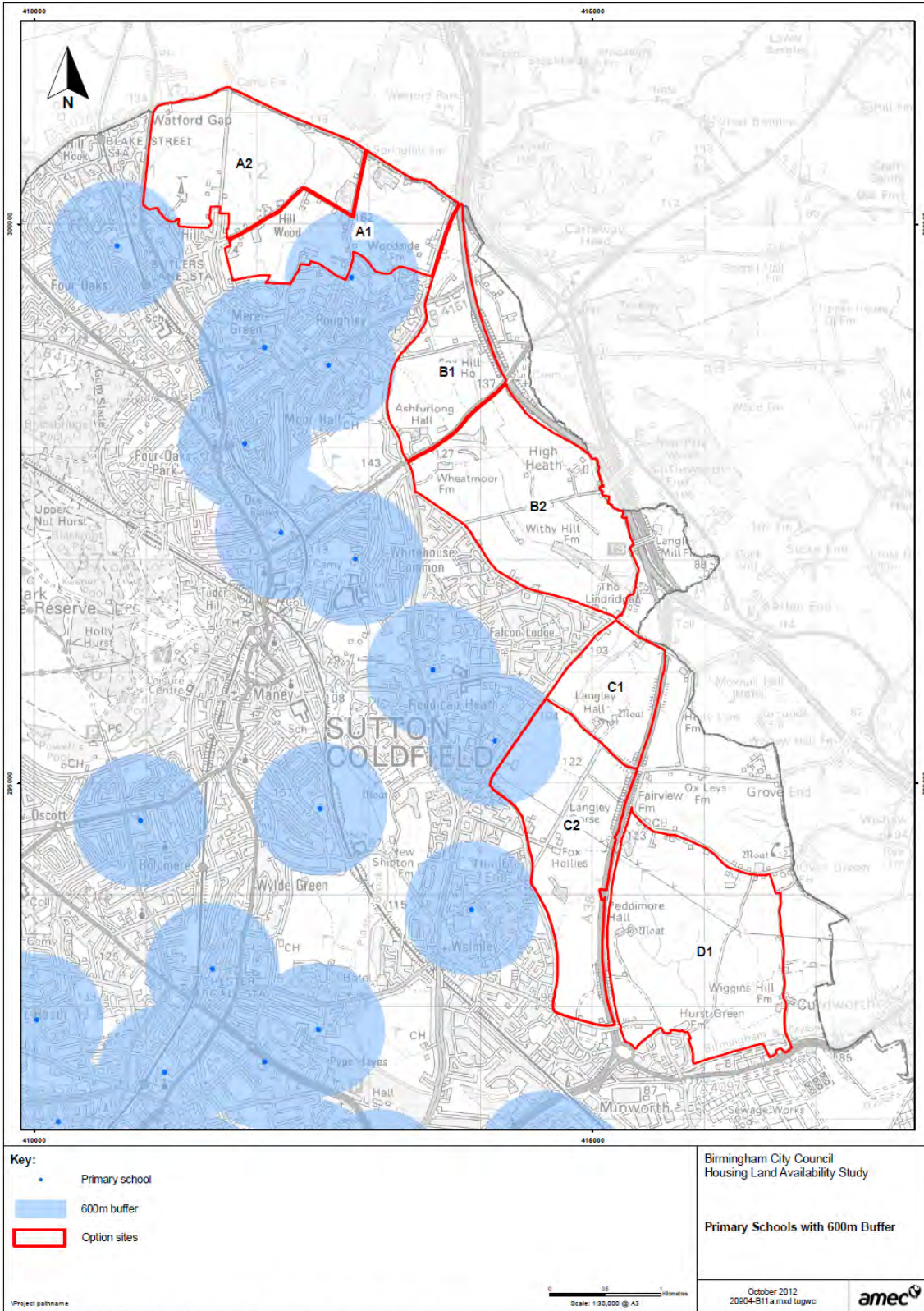
Access to Post Offices



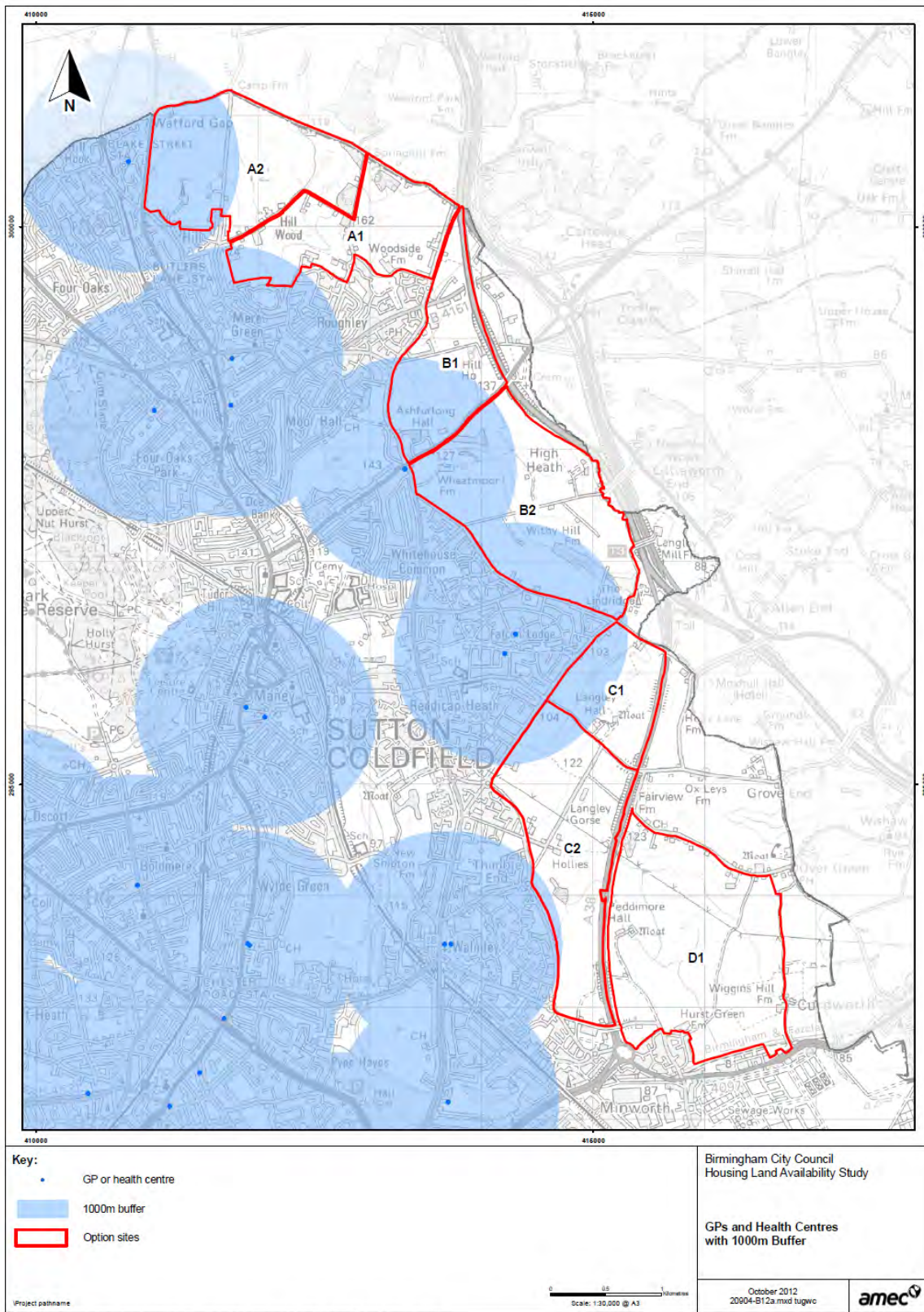
Access to Food Stores



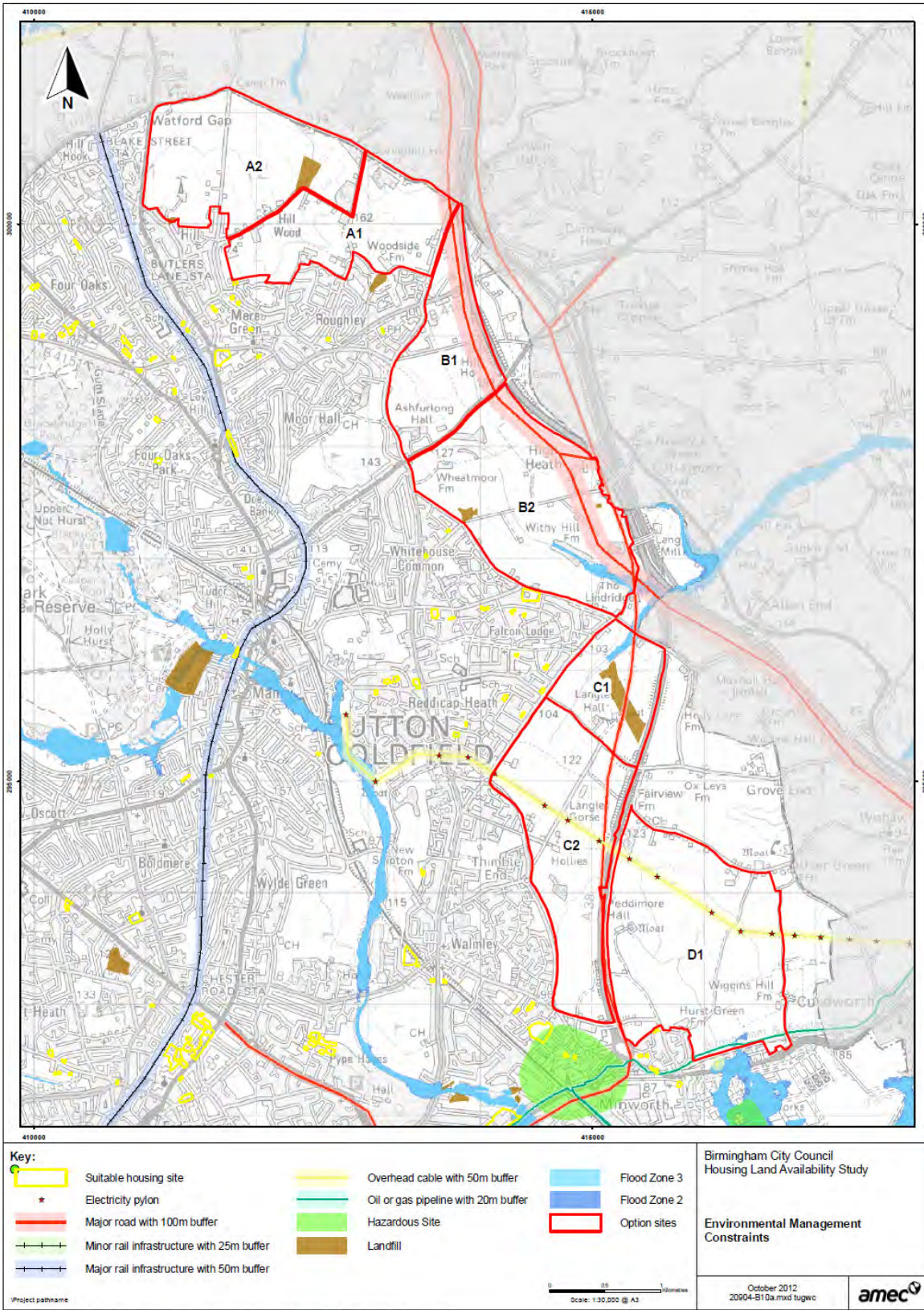
Access to Primary Schools



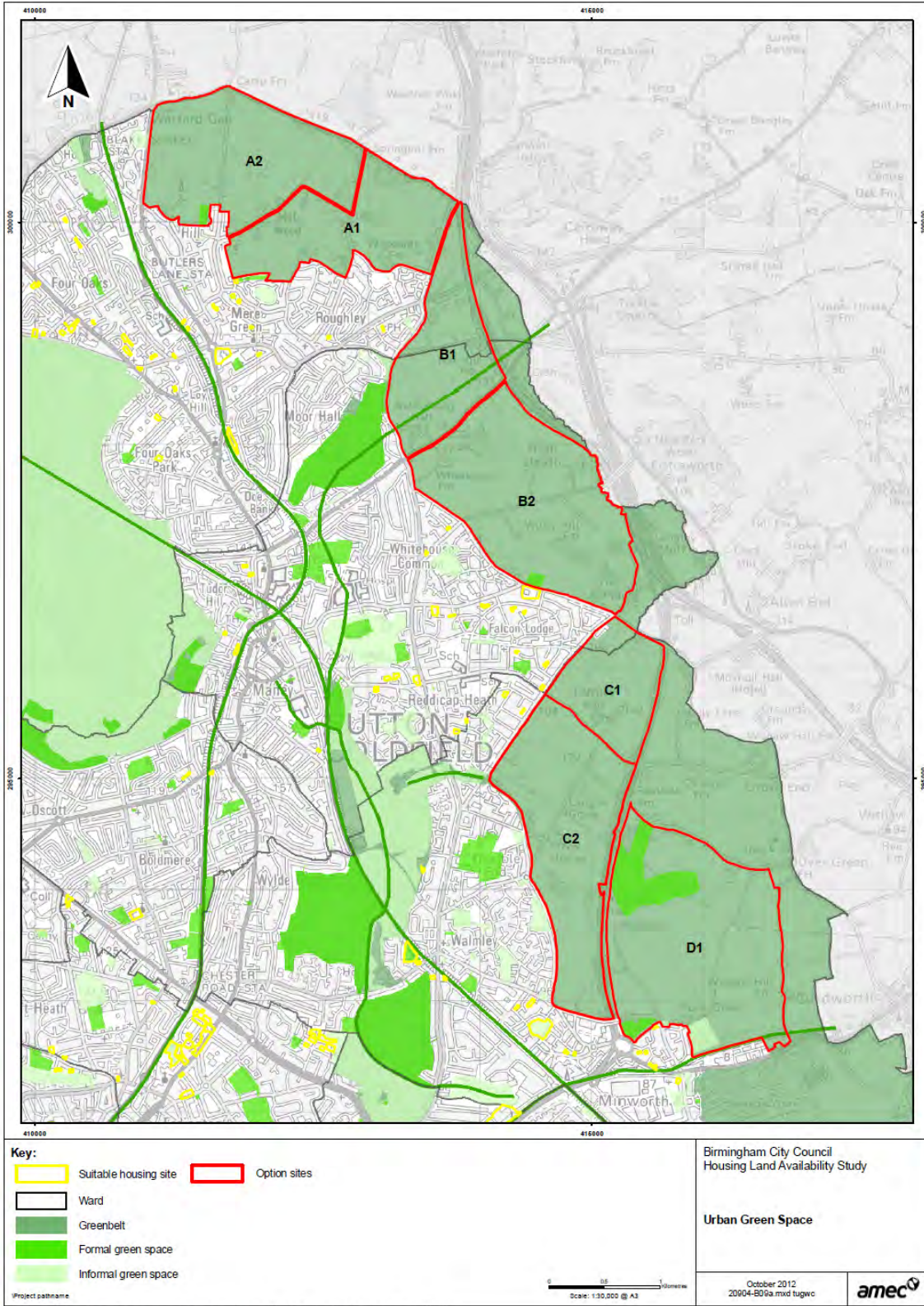
Access to GPs and Health Care Facilities



Environmental Management Constraints



Urban Green Space



Natural and Cultural Constraints

