Sustainability Appraisal of the Royal Borough of Windsor and Maidenhead's Borough Local Plan Submission Version - Proposed Changes

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LEPUS CONSULTING
LANDSCAPE, ECOLOGY, PLANNING & URBAN SUSTAINABILITY

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Photo: Fields in Maidenhead by Timo Newton-Syms

About this report & notes for readers

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The conclusions below are based on the best available information, including information that is publicly available. No attempt to verify these secondary data sources has been made and they have been assumed to be accurate as published.

This report was prepared during August and October 2019 and is subject to and limited by the information available during this time. This report has been prepared with reasonable skill, care and diligence within the terms of the contract with the client. Lepus Consulting accepts no responsibility to the client and third parties of any matters outside the scope of this report. Third parties to whom this report or any part thereof is made known rely upon the report at their own risk.

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Abbreviations

ALC	Agricultural Land Classification
AONB	Area of Outstanding Natural Beauty
AQMA	Air Quality Management Area
ASLI	Areas of Special Landscape Importance
BLPSV	Borough Local Plan Submission Version (2017)
BLPSV-PC	Borough Local Plan Submission Version – Proposed Changes (2019)
BMV	Best and most versatile
C of E	Church of England
CEA	Cumulative Effects Assessment
CIL	Community Infrastructure Levy
dpa	Dwellings per annum
EoSS	Edge of Settlement Study
GHG	Greenhouse Gas
GP	General Practitioner
ha	Hectare
HELAA	Housing and Economic Land Availability Assessment
IDP	Infrastructure and Developer Contributions
IRZ	Impact Risk Zone
km	kilometre
LAQM	Local Air Quality Management
LEA	Landscape Enhancement Area
LGS	Local Geological Site
LNR	Local Nature Reserve
LVIA	Landscape and Visual Impact Assessment
LWS	Local Wildlife Site
m	Metre
MSA	Minerals Safeguarding Area
NERC	Natural Environment and Rural Communities
NHS	National Health Service
NNR	National Nature Reserve
NPPF	National Planning Policy Framework
OAN	Objectively Assessed Need
PDL	Previously Developed Land
PPG	Planning Practice Guidance
PPP	Plans, Programmes and Policy
PRoW	Public Right of Way
RBWM	The Royal Borough of Windsor and Maidenhead
RPG	Registered Parks and Gardens
SA	Sustainability Appraisal
SAC	Special Area of Conservation
SAMM	Strategic Access Management and Monitoring
SANG	Suitable Alternative Natural Greenspace

SEA	Strategic Environmental Assessment
SM	Scheduled Monument
SPA	Special Protection Areas
SPD	Supplementary Planning Document
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest
SUDS	Sustainable Urban Drainage Systems
SWMSA	South West Maidenhead Strategic Area

1 Introduction

1.1 Background

1.1.1 Lepus Consulting Ltd (Lepus) has been instructed by the Royal Borough of Windsor and Maidenhead (RBWM) Council (hereafter referred to as the Council) to undertake a Sustainability Appraisal (SA) of the Borough Local Plan Submission Version – Proposed Changes (hereafter referred to as the BLPSV-PC). This document presents an assessment of the likely sustainability impacts of proposals in the BLPSV-PC as well as the potential impacts of reasonable alternatives for each proposal.

1.1.2 The Planning and Compulsory Purchase Act [1] requires Sustainability Appraisal (SAs) to be carried out on Development Plan Documents. Additionally, the Environmental Assessment of Plans and Programmes Regulations [2] (SEA Regulations) require Strategic Environmental Assessments (SEA) for a wide range of plans and programmes, including Local Plans. This SA report incorporates the requirements of SEA.

1.1.3 Planning Practice Guidance (PPG) on SEA and SA[3] states:

"Sustainability appraisals incorporate the requirements of the Environmental Assessment of Plans and Programmes Regulations 2004 (commonly referred to as the 'Strategic Environmental Assessment Regulations'). Sustainability appraisal ensures that potential environmental effects are given full consideration alongside social and economic issues".

[1] Planning and Compulsory Purchase Act 2004. Available at: https://www.legislation.gov.uk/ukpga/2004/5/contents [Date Accessed: 02/10/19]

[2] The Environmental Assessment of Plans and Programmes Regulations 2004. Available at: http://www.legislation.gov.uk/uksi/2004/1633/contents/made [Date Accessed: 02/10/29]

[3] MHCLG (2015) Guidance: Strategic environmental assessment and sustainability appraisal. Available at: https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal [02/10/19]

1.2 Purpose of this report

1.2.1 This report has been prepared to summarise the SA process to date and inform the examination stage of the preparation of the BLPSV-PC. There are four key purposes of the SA/SEA process, these are: ensuring that the Local Plan is sustainable and responsive to environmental impacts by identifying potential significant impacts and setting out ways to mitigate adverse impacts; documenting the story of the plan-making process; influencing the plan-making process particularly at the reasonable alternatives and mitigation stages; and, focusing on key issues and impacts.

1.2.2 This report is one of a series of documents that have been prepared to document the iterative SA process. Such an approach enables the Council to demonstrate that it has identified, described and evaluated reasonable alternatives during the making of the Local Plan. **Chapter 2** provides further details of the SA process to date.

1.3 About the Royal Borough of Windsor and Maidenhead

1.3.1 The borough is located in Berkshire, in the South East of England. RBWM is bordered by Slough Borough, South Bucks District and Wycombe District to the north; Wokingham Borough to the west; Bracknell Forest Borough and Surrey Heath Borough to the south; and, Runnymede Borough and Spelthorne Borough to the east (see **Figure 1.1**).

1.3.2 The borough boundary encompasses the two towns of Maidenhead and Windsor, along with a number of smaller settlements, including Ascot, Sunningdale and Eton. It is home to Windsor Castle and Windsor Great Park, which are recognised as internationally significant heritage and environmental assets, and which attract high visitor numbers each year. The borough is also home to other popular visitor attractions such as Windsor and Ascot racecourses and Legoland Windsor. The borough had a resident population of 150,900 in 2018[4].

[4] Office for National Statistics (2019) Labour Market Profile – Windsor and Maidenhead. Available at: https://www.nomisweb.co.uk/reports/lmp/la/1946157289/report.aspx [Date Accessed: 30/09/19]

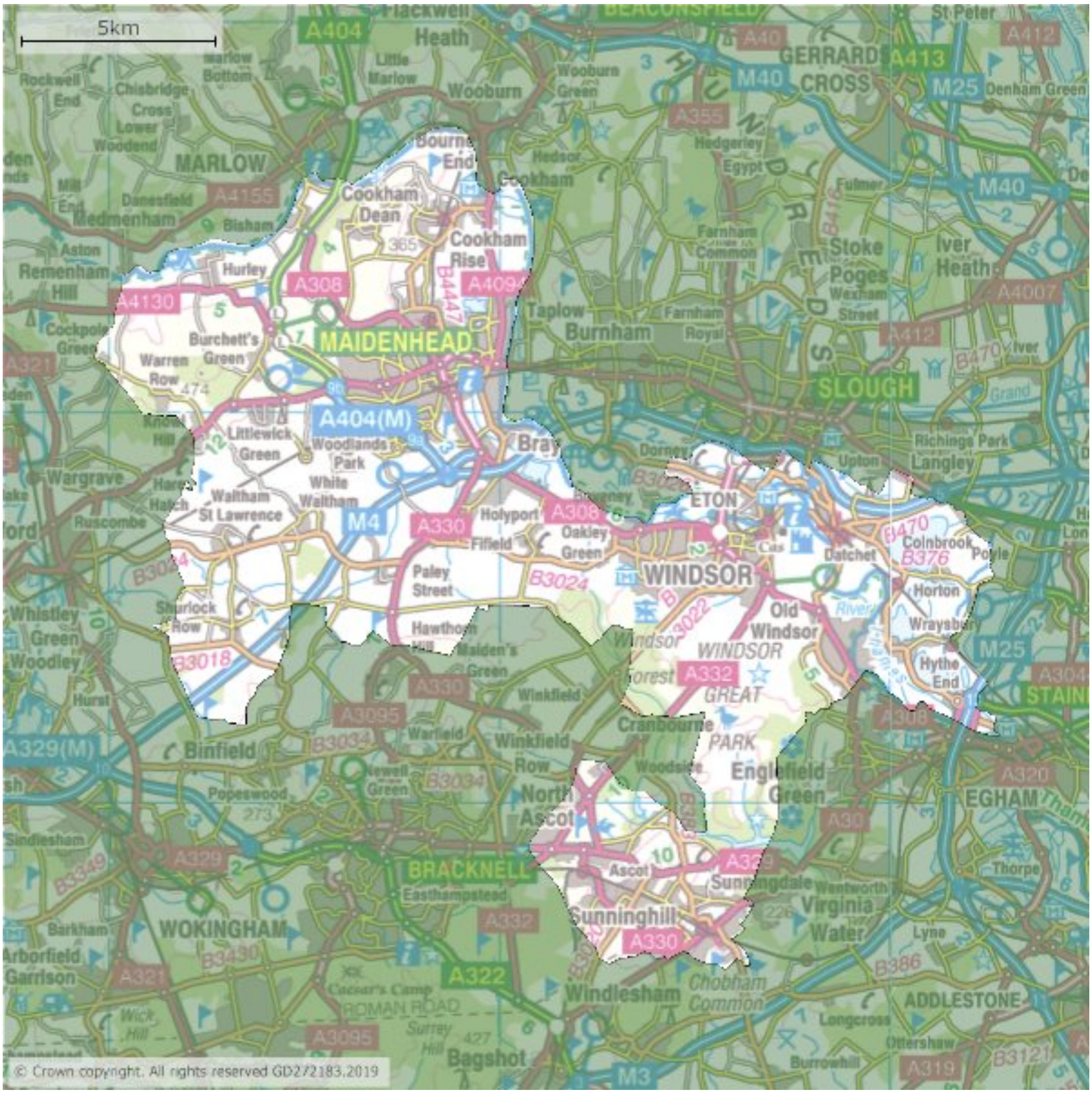

Figure 1.1: Map of RBWM (source: Office of National Statistics)

1.4 The RBWM Borough Local Plan

1.4.1 The role of the BLPSV-PC is to set out the Council's vision for the next 20 years and help to shape the future of the borough. The Plan does this by setting out policies that guide the development of homes and businesses, protect important biodiversity, landscapes and historic character, whilst also seeking to provide for the needs of all communities across RBWM.

1.4.2 The contents of the BLPSV-PC is as follows:

- **Chapter 1:** Introduction to the Pre-submission Borough Local Plan;
- **Chapter 2:** List of Policies;
- **Chapter 3:** Spatial Portrait;

- **Chapter 4:** Spatial Vision and Objectives;
- **Chapter 5:** Spatial Strategy;
- **Chapter 6:** Quality of Place;
- **Chapter 7:** Housing;
- **Chapter 8:** Economy;
- **Chapter 9:** Town Centres and Retail;
- **Chapter 10:** Visitors and Tourism;
- **Chapter 11:** Historic Environment;
- **Chapter 12:** Natural Resources;
- **Chapter 13:** Environmental Protection;
- **Chapter 14:** Infrastructure;
- **Chapter 15:** Monitoring and Implementation;
- **Chapter 16:** Glossary; and
- **Chapter 17:** Appendices.

1.4.3 The BLPSV-PC is the spatial expression of the Council's vision for the future of the borough and is built on the main themes of:

- Residents first;
- Value for money;
- Delivering together; and
- Equip ourselves for the future.

1.4.4 These themes are implemented through the spatial vision for the Local Plan, which sets out what the borough will look like following the implementation of the plan and seeks to create a place where everyone can thrive in a safe, healthy and sustainable environment.

1.4.5 The plan identifies eleven objectives which will help to achieve the spatial vision (**Table 1.1**).

Table 1.1: *Aims and Objectives of the BLPSV-PC*		
1	Special qualities: To conserve and enhance the special qualities of the borough's built and natural environments.	• Protect the openness of the Green Belt; • Retain the character of existing settlements through guiding development to appropriate locations and ensuring high quality design of new development; • Protect the special qualities of the built environment including heritage assets; • Protect and enhance biodiversity within the borough; and • Protect and enhance the River Thames and other watercourses and their associated riparian corridors.
2	Meeting housing needs: To meet the varied housing needs of residents in an appropriate way whilst steering development to the most sustainable locations.	• Provide sufficient new housing to meet the borough's needs; • Make the most of previously developed land; and • Provide housing that meets the needs of all sections of community including a sufficient level of affordable housing.
3	Visitor economy: To enable the continued success and evolution of the borough's distinct visitor economy.	• Reinforce the role of key tourism centres such as Windsor, Ascot and the River Thames; • Provide sufficient accommodation and facilities for tourists; and • Identify and promote opportunities for additional tourism related development.
4	Local business economy: Enable the evolution and growth of the local business economy.	• Maintain a buoyant and broad-based economy; and • Support the reuse and redevelopment of existing employment-generating sites and premises in order to maintain a sustainable balance between jobs and local labour.
5	Town, district and local centres: To promote the vitality and viability of town centres so that they are at the heart of their communities.	• Promote the town centres of Windsor and Maidenhead as the principal locations for office, retail, tourism and leisure development; and • Support the delivery of the adopted Maidenhead Area Action Plan Development Plan Document as amended.
6	Infrastructure: To retain, improve and provide new facilities and other infrastructure to support new development and ensure a high quality of life for residents of all ages.	• Secure the provision of utilities, services and facilities to enable planned development in a coordinated and timely manner; and • Ensure that new development makes an appropriate contribution towards infrastructure needs arising from such development.
7	Sustainable transport: To promote sustainable transport and alternatives to the use of private vehicles.	• Encourage the provision of facilities for pedestrians and cyclists in new development; • Locate development to minimise the need for travel; and • Promote the use of public transport.
8	Heritage: To seek to maintain and enhance the rich heritage of the borough.	• Protection of designated areas and developments, such as scheduled monuments, listed buildings and conservation areas; and • Promotion of high-quality development and design in sensitive heritage areas.
9	Environmental protection: To maintain and enhance the natural environment of the borough, including the water environment.	• Ensure that new development contributes to environmental improvement; and • Protect designated areas and features.
10	Open space and leisure: To provide adequate	• Ensure that new development contributes to providing open space within new development; and

Table 1.1: Aims and Objectives of the BLPSV-PC		
	open space for planned development and appropriate leisure and recreational facilities.	• Maintain and enhance leisure and recreation facilities.

1.5 Using this document

1.5.1 This report should be read alongside the BLPSV-PC. The various appendices provide essential contextual information to the main body of the report. The contents of this SA Report are listed below:

- **Chapter 1** presents an introduction to this report;
- **Chapter 2** presents the SA process to date;
- **Chapter 3** presents details on the scoping stage;
- **Chapter 4** presents the assessment methodology;
- **Chapter 5** presents details of reasonable alternatives considered throughout the process;
- **Chapter 6** presents details on the preferred approach;
- **Chapters 7 to 15** presents the likely significant effects on the environment;
- **Chapter 16** presents the cumulative effects assessment;
- **Chapter 17** presents the conclusions, recommendations and next steps;
- **Appendix A** presents the SA Framework;
- **Appendix B** presents the assessment of policies;
- **Appendix C** presents the assessments of site allocations;
- **Appendix D** presents the assessment of reasonable alternative sites; and
- **Appendix E** presents and update of relevant Plans and Programmes.

1.6 Meeting the requirements of the SEA Directive

1.6.1 There are certain requirements that this report must satisfy in order for it to qualify as an 'environmental report', as set out in the SEA Directive. These requirements, and where in the report they have been met, are presented in **Figure 1.2** below.

a) Provide an outline of the contents, main objectives of the plan or programme, and relationship with other relevant plans and programmes.

See section 1.4; section 3.2; and Appendix E.

b) Understand the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.

See: the SA Scoping Report; 'Baseline' sections of Chapters 7 to 15; and section 3.4.

c) The environment characteristics of areas likely to be significantly affected.

See Chapters 7 to 15

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 the Birds and Habitats Directives.

See Chapters 7 to 15

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.

See Appendix E.

f) The likely significant effects on the environment: biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural and architectural heritage. These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

See Chapters 6 to 16

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.

See Chapters 7 to 15 and Chapter 17

h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties in compiling the required information.
See Chapters 5

i) A description of measures envisaged concerning monitoring.
See section 17.4

j) A non-technical summary of the information provided under the above headings.

See the Non-technical Summary

Figure 1.2: *SEA checklist*

2 The SA process to date

2.1 About this chapter

2.1.1 The purpose of this chapter is to provide chronological details of the SA process to date. Presently, the plan-making stage is at examination. This is shown as Stage D in **Figure 2.1**. Previously, there have been several other rounds of appraisal. These are listed in **Table 2.1**.

2.1.2 This chapter presents a summary of the appraisal process up to, and including, the examination.

2.2 Borough Local Plan progress

2.2.1 The aim of the Local Plan is to shape the next two decades of growth within RBWM. The Plan will help manage growth in sustainable and appropriate locations and reduce the risk of inappropriate and opportunistic development. To enable this, a series of sustainability appraisals have been undertaken which assess spatial strategies, strategic locations, sites and policies.

2.2.2 **Table 2.1** illustrates the Local Plan and SA process to date. The stages identified in the table are described in more detail in the rest of the chapter. Details of appraisals and the outcomes of each SA stage is discussed further in **Chapters 3 and 5**.

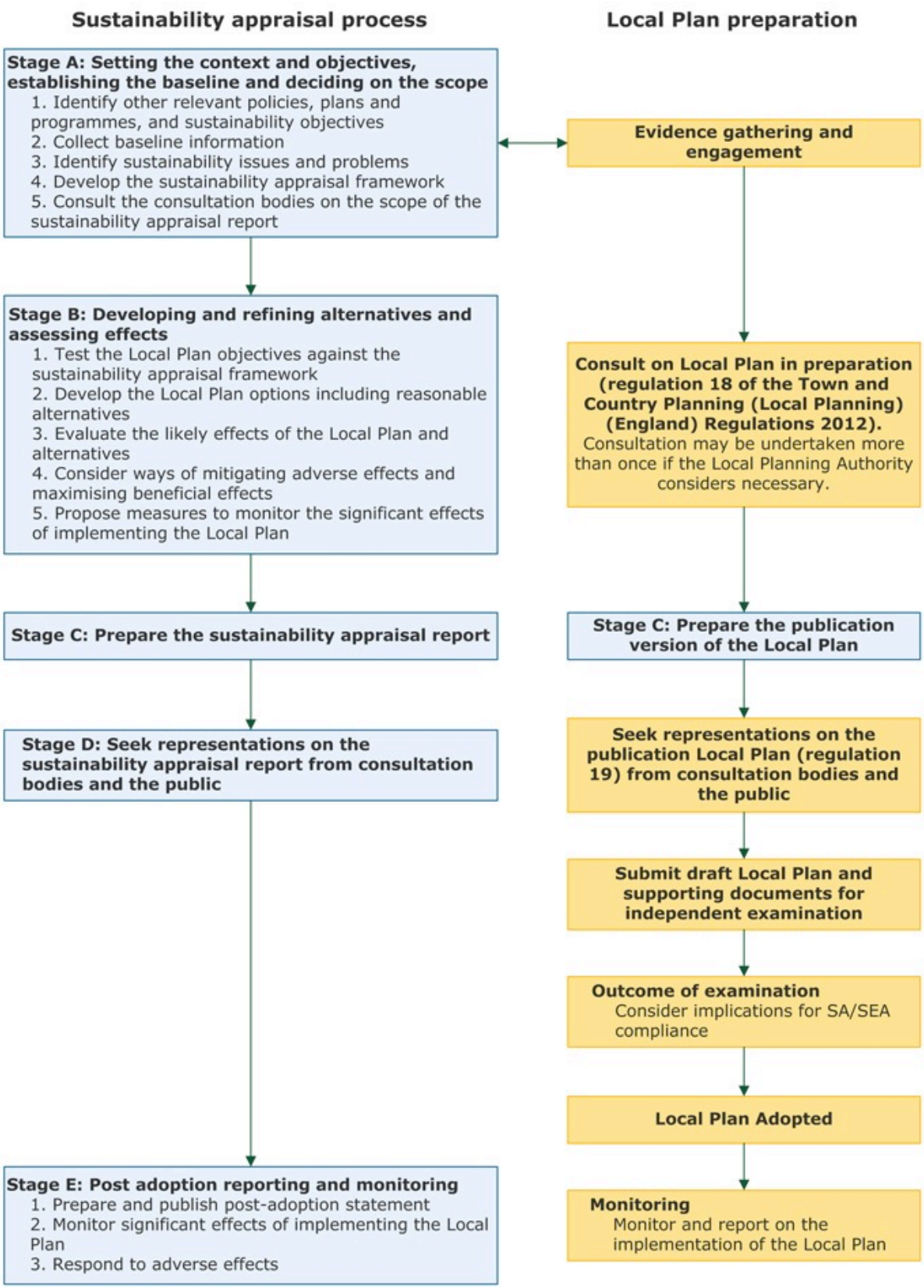

Figure 2.1: *Stages of the SA process in relation to Local Plan preparation*[5].

[5] MHCLG (2019) Planning Practice Guidance: Strategic environmental assessment and sustainability appraisal. Available at: https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal [Date Accessed: 30/09/19]

Table 2.1: The Local Plan and SA process

Date	Local Plan process	Sustainability Appraisal
October 2016		**SA Scoping Report** This document sets out the key issues and opportunities within RBWM and presents the SA Framework for the future SA stages.
December 2016 – January 2017	**Regulation 18 Consultation** This consultation period allowed for comments on the draft BLPSV, and included details on the spatial portrait, vision and objectives, as well as 57 policies	**Regulation 18 SA Report** This SA Report appraised four strategic scenarios, 57 draft policies, five strategic locations and approximately 120 reasonable alternative sites.
June – September 2017	**Regulation 19 Publication** This consultation allowed comments to be received on the Council's preferred BLPSV.	**Regulation 19 SA Report** This report appraised 46 policies, 97 sites and assessed likely cumulative effects as well as setting out mitigation and monitoring recommendations. This document constitutes an Environmental Report under Article 5 of the SEA Directive.
January 2018	**Submission** Following the Regulation 19 publication stage, the BLPSV and supporting documents were submitted to the Secretary of State for examination by an independent Inspector.	**SA Addendum to the Regulation 19 SA Report** This addendum appraised three housing number options, twelve broad spatial options, affordable housing policy and 15 sites. The document also contains the assessment of cumulative effects, mitigation and monitoring.
August – October 2019	**Borough Local Plan Submission Version – Proposed Changes (2019)** In response to issues raised during the examination hearings, the Council has updated the Local Plan. This updated document presents the Council's preferred approach for growth within RBWM.	**SA Report of BLPSV-PC** This report appraises the final policies and site allocations of the BLPSV-PC. This document constitutes an Environmental Report under Article 5 of the SEA Directive.

2.3 Scoping (2016)

2.3.1 The SA Scoping report was prepared in 2016. The aim of the report was to identify the scope and level of detail to be included in the SA process. The report identifies relevant local opportunities and issues and sets out the SA Framework. The SA Scoping Report is discussed further in **Chapter 3**.

2.4 Regulation 18 (2016)

2.4.1 The November 2016 draft Borough Local Plan [6] and accompanying Regulation 18 SA Report[7] were consulted on between December 2016 and January 2017.

2.4.2 The Regulation 18 SA Report assessed 57 draft policies and 67 reasonable alternative sites. The report assessed five strategic locations, including Maidenhead Town Centre, the Triangle Site, Maidenhead Golf Course, Ascot Town Centre and Land west of Windsor. The report also assessed four strategic scenarios, which focused on urban sites, brownfield sites, and two options for development within the Green Belt. The appraisal of these strategic scenarios are discussed further in **Chapter 5**.

2.5 Regulation 19 (2017)

2.5.1 The Borough Local Plan 2013 – 2033 Submission version [8] and accompanying Regulation 19 SA Report[9] were consulted on between June and September 2017.

2.5.2 The Regulation 19 SA considered 97 preferred development locations and 46 policies. The SA report identified potential positive impacts of the BLPSV, and some potential adverse impacts, which included an increase in energy demand across the borough, potential flood risk and a loss of soil resource amongst others. The appraisal of these sites and policies are discussed further in **Chapter 5**.

[6] RBWM Council (2016) Borough Local Plan 2013 – 2033: Regulation 18. Available at: http://rbwm.objective.co.uk/file/4307024 [Date Accessed: 09/10/19]

[7] Lepus Consulting (2016) Sustainability Appraisal of the Borough Local Plan 2013-2033: Regulation 18 SA Report. Available at: http://consult.rbwm.gov.uk/file/4307011 [Date Accessed: 09/10/19]

[8] RBWM Council (2017) Regulation 19 Borough Local Plan Submission Version document. Available at: http://consult.rbwm.gov.uk/file/4616592 [Date Accessed: 09/10/19]

[9] Lepus Consulting (2017) Sustainability Appraisal of the Borough Local Plan 2013 – 2033: Regulation 19 SA Report. Available at: http://consult.rbwm.gov.uk/file/4593974 [Date Accessed: 09/10/19]

2.6 Regulation 22 (2018)

2.6.1 In January 2018, the Council submitted the proposed SV and supporting documents were submitted to the Secretary of State for Communities and Local Government for independent examination.

2.6.2 The Sustainability Appraisal of the Borough Local Plan Addendum[10] was prepared in January 2018 and was submitted to the Inspector alongside the BLPSV. The addendum assessed three housing number options, twelve broad spatial options, and affordable housing policy and 16 sites. This is discussed further in **Chapter 5**.

2.7 Regulation 24 (2019)

2.7.1 A short series of hearings were held in June 2018. Following these, the Council has sought to provide further information in response to issues raised during the hearings. The Council has updated its Housing and Economic Land Availability Assessment (HELAA). The SA process has been used to assess reasonable alternative development sites identified from the HELAA, and subsequently, has assessed preferred site allocations and policies. **Chapter 5** explains the reasonable alternatives process in more detail.

[10] Lepus Consulting (2018) Sustainability Appraisal of the Borough Local Plan 2013 – 2033: Addendum. Available at: http://consult.rbwm.gov.uk/file/4860642 [Date Accessed: 09/10/19]

3 Scoping

3.1 Introduction

3.1.1 The first phase of preparation for the SA was the scoping stage. Scoping is the process of deciding the scope and level of detail of an SA, including the environmental effects and alternatives to be considered, the assessment methods to be used, and the structure and contents of the SA Report, in accordance with the PPG[11].

3.1.2 The purpose of the SA Scoping Report is to set the criteria for assessment (including the SA Objectives), and establish the baseline data and other information, including a review of relevant policies, programmes and plans. The scoping process involves an overview of key issues, highlighting areas of potential conflict.

3.1.3 The Scoping Report covers the early stages of the SA Process and includes information about:

- Identifying other relevant policies, plans and programmes, and environmental objectives;
- Collecting baseline information;
- Identifying environmental issues and problems; and
- Developing the SA Framework.

3.1.4 The Scoping Report that informs this SA was carried out by Lepus Consulting in 2016[12]. The Scoping Report was subject to a statutory five-week period of consultation with the Statutory Consultees, including Natural England, Historic England and the Environment Agency, from October to November 2016. The comments received have been given due consideration in the preparation of the SA.

[11] MHCLG (2015) Guidance: Strategic environmental assessment and sustainability appraisal. Available at: https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal [02/10/19]

[12] Lepus Consulting (2016) Strategic Environmental Assessment of the RBWM Local Plan: Scoping Report

3.2 Policy, plan and programme review

3.2.1 The preparation of a Local Plan may be influenced in various ways by other plans or programmes, or by external environmental protection objectives such as those laid down in policies and legislation. The SA process seeks to take advantage of potential synergies and addresses any inconsistencies and constraints.

3.2.2 The Scoping Report presented an analysis of the objectives of the key policies, plans and programmes (including legislation) that are relevant to the Local Plan and the SA assessment process. These were presented by their geographic relevance, from international to local level. A review of relevant plans and programmes is presented in **Appendix E.**

3.3 Baseline data and information

3.3.1 A key part of the scoping process is the collection of baseline data. The purpose of this exercise is to help identify key issues and opportunities facing the area which might be addressed by the Local Plan, and to provide an evidence base for the assessment.

3.3.2 The SA Scoping Report provided an evaluation of existing environmental, social and economic conditions within the borough and their likely evolution in absence of the Local Plan. The baseline environmental conditions of the borough have been updated in line with recent data and statistics and are presented in **Chapters 7 to 15**.

3.4 Evolution of the environment without the Plan

3.4.1 The SEA Directive requires *"information on the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme".*

3.4.2 **Table 3.1** below considers the likely evolution of the baseline within RBWM in the absence of the BLPSV-PC. This takes into account information gathered at the Scoping stage and more up-to-date data and statistics.

3.4.3 In the absence of the Local Plan, no new Plan-led development would occur within the Plan area over and above that which is currently proposed in the adopted Local Plan[13]. In this scenario, an appeal-led system would predominate. The nature and scale of development that may come forward under an appeal-led system would be uncertain. In a 'no Plan' scenario, other plans and policies would continue to be a material consideration in planning decisions and legislative protection would continue to be in place. The following table describes the likely evolution of the baseline without the Local Plan.

Table 3.1: *Likely evolution without the Plan*

Sustainability Topic	Likely evolution without the Plan
Accessibility and Transport	• Road traffic congestion is expected to increase, especially along the motorways and through Maidenhead and Windsor. • Road infrastructure improvements, such as smart motorways, are expected to continue in the absence of the Plan. • Public rights of way are expected to be continually improved through the Public Rights of Way Management and Improvement Plan and the Waterways Project. These positive effects are likely to mostly affect recreational users. • The BLPSV-PC proposes several policies which would be likely to increase the uptake of sustainable transport use amongst residents, which would be likely to help reduce congestion of on local roads. In the absence of the Plan, it is uncertain the extent to which residents may opt to use sustainable transport modes. • In the absence of the Plan, the borough's Local Transport Plan[14] will still be implemented, which would be likely to have a positive impact on the local road network, relieving congestion and improving public transport across the Plan area.
Air Quality	• Primary sources of air pollution in the UK include road transport, industry, imports and agriculture. These sources would not be expected to change, with or without the Plan. • In the absence of the Plan, development could potentially be located in close proximity to primary sources of air pollution. However, national trends indicate improvements in air pollution due to advances in technology in the long term. • The BLPSV-PC proposes several policies which would be likely to help increase the rate of sustainable transport uptake amongst residents. Without the Plan, it is uncertain the extent to which residents may opt for low emission or sustainable transport modes. • National trends in the increasing uptake of lower emission vehicle types, such as electric cars, would be likely to help limit road transport associated emissions in the Plan area. • In the absence of the Plan, Air Quality Management Areas (AQMAs) would still be designated and air quality in these areas would continue to be monitored.
Biodiversity and Geodiversity	• In the absence of the Plan, sites designated for their national and international biodiversity and/or geodiversity value would continue to benefit from legislative protection.

[13] Royal Borough of Windsor and Maidenhead Council (2003) The Royal Borough of Windsor and Maidenhead Local Plan: Incorporating alterations adopted June 2003. Available at: https://www3.rbwm.gov.uk/info/200209/planning_policy/1343/adopted_local_plan [Date Accessed: 02/10/19]

[14] Royal Borough of Windsor and Maidenhead (2012) Local Transport Plan 2012 – 2026. Available at: https://www3.rbwm.gov.uk/downloads/download/90/local_transport_plan_documents [Date Accessed: 02/10/19]

Sustainability Topic	Likely evolution without the Plan
	• The Thames Basin Heaths SPD[15] would remain a material consideration, setting out the strategy for the provision of SANGS as well as access management and monitoring at the SPA, which would be expected to help manage the designated site, with or without the Plan. • The Berkshire Biodiversity Strategy 2014 – 2020[16] aims to increase the area of priority habitats in Berkshire, but trends in habitat creation are currently unknown. • Biodiversity net gain at development sites would be expected, due to policies set out in the NPPF. • In the absence of the Plan, the NPPF, and its policies relating to biodiversity, would continue to be material consideration in planning decisions. It is uncertain if development proposals would voluntarily adopt additional biodiversity enhancement measures. • There could potentially be adverse impacts on local biodiversity features, in particular non-designated sites and priority habitats, due to development, including direct loss or damage, recreational disturbance and decreases in air quality.
Climate Change	• Per capita CO_2 emissions in RBWM are expected to decrease in the future, based on previous trend data. • International and national GHG emission reduction targets would continue to promote a reduction in carbon emissions in the absence of the Plan. • Technological advances, which may include renewable energies, electric vehicles and efficient electricity supplies, would be expected to occur in the absence of the Plan. • In the absence of the Plan, it is uncertain if new residents would be located in close proximity to essential services and if new residents would be encouraged to reduce reliance on personal car use.
Economic factors	• Continuing transformation of existing employment land into high quality employment land would be expected in the absence of the Plan. • The number of jobs in RBWM is expected to increase based on current trend data. • The number of businesses in the borough is expected to increase.
Health	• The percentage of children in low income families is expected to decrease. • In the absence of the Plan, it is uncertain if residents of new developments would be located in areas with poor access to essential health services. • Without the Plan, it is uncertain if existing public green spaces would be maintained and enhanced, to encourage residents to live healthy and active lifestyles.
Historic Environment	• In the absence of the Plan, designated heritage assets would continue to benefit from legislative and policy protection. • Heritage assets, including underground archaeological features, would be likely to be discovered in the future, with or without the Plan.
Housing	• Without the Plan, it is uncertain if future housing provision would satisfy local needs in terms of type, cost and location. • In the absence of the Plan, there could potentially be the reduced ability to refine the housing stock to meet the changing demands of existing residents such as the provision of elderly specific housing accommodation. • House prices are expected to increase within the borough.
Landscape and Townscape	• In the absence of the Plan, the London Metropolitan Green Belt would continue to benefit from policy protection set out in the NPPF. • Pressure from development proposals located in the open countryside of RBWM would be likely to increase, which could potentially have negative impacts on the quality and distinctiveness of the Plan area.

[15] Royal Borough of Windsor and Maidenhead (2010) Thames Basin Heaths Special Protections Area: Supplementary Planning Document. Available at: https://www3.rbwm.gov.uk/info/201039/non-development_plan/458/biodiversity_and_thames_basin_heath_spa/2 [Date Accessed: 02/10/19]

[16] Berkshire Local Nature Partnership (2014) The Natural Environment in Berkshire: Biodiversity Strategy 2014 – 2020. Available at: https://berkshirelnp.org/index.php/what-we-do/strategy/biodiversity-action-plan [Date Accessed: 02/10/19]

Sustainability Topic	Likely evolution without the Plan
	• The Landscape Character Assessment SPD would still be a material consideration without the Plan in place. • It is uncertain the extent to which development proposals would seek to conserve and enhance the local landscape character under an appeal-led system. • The setting of the Chilterns AONB would still be protected by legislation, policies set out in the NPPF, the Chilterns AONB Management Plan and the PPG.
Material Assets	• It is thought likely that without the Plan, rates of recycling waste per capita will rise in the Plan area in line with national and international trends and targets. • The extent to which development may arise in the Plan area without the Plan is uncertain. However, an increase in the local population would be expected and it is therefore thought to be likely that without the Plan, net waste generation in the Plan area will rise to some extent. • The emerging Joint Waste and Minerals Plan for Berkshire would be expected to control and manage waste and mineral extraction throughout RBWM in the absence of the Plan.
Population and Quality of Life	• The population across the Plan area are expected to continue to increase. This is likely to place greater pressure on the capacity of key services and amenities, including health and leisure facilities, employment opportunities, educational establishments and housing. • Notable offences recorded by the police is expected to decrease within the borough. • Without the Plan, there could be less opportunity to enhance community benefits (such as community hubs) associated with Plan-led housing proposals. • An appeal-led development scenario is unlikely to improve sustainable access routes to schools.
Water and Soil	• The risk of flooding is likely to be exacerbated in the Plan area as a result of climate change, but flood risk would be continued to be managed through policies and guidance within the NPPF, PPGs and River Basin Management Plans. • The increased risk of surface water flooding would depend on the size, nature and extent of non-porous built surface cover in the Plan area in the future. • The Plan area's population will rise, with or without the Plan, and net water demand in the Plan area would be likely to rise as a result. Water Resource Management Plans would continue to plan for future trends in water supply, demand and environmental quality. • It is uncertain how water efficiency per capita may be affected in the absence of the Plan. • Policies within the NPPF would also be expected to help protect against the worsening of water quality across the Plan area. • Water abstraction, consumption and treatment in the local area will continue to be managed by the Environment Agency and water companies through the River Basin Management Plans, Water Resource Management Plans and Catchment Abstraction Management Strategy in line with the EU Water Framework Directive. Soil erosion and soil loss are occurring at significant rates throughout the country due to agriculture, climate change and urbanisation. Without the Plan, the extent of development on previously undeveloped greenfield land is uncertain. • Without the Plan, it is uncertain what percentage of ecologically and agriculturally important soils would be lost to development across the Plan area.

3.5 The SA Framework

3.5.1 The purpose of the SA Framework is to help ensure the Plan is prepared to align with the principles of sustainability. It also enables the potential impacts of the BLPSV-PC to be described, analysed and compared.

3.5.2 The SA Framework consists of a range of environmental, social and economic objectives. The extent to which these objectives are achieved can, in most cases, be measured using a range of indicators. There is no statutory basis for setting objectives, but they are a recognised way of considering the effects of a plan and comparing alternatives. The SA Objectives provide the basis from which impacts of the Local Plan were assessed.

3.5.3 The SA Objectives were developed through the plans, programmes and policy (PPP) review, the baseline data collection and the key issues identified for the plan area. The SA topics identified in Annex I (f) of the SEA Directive[17] were one of the key determinants when considering the SA Objectives to be used for appraisal purposes. The SA Objectives seek to reflect each of these influences to ensure the assessment process is robust and thorough. No changes to the SA Framework have been made throughout the SA process. The full SA framework is presented in **Appendix A**.

[17] Biodiversity flora and fauna; population; human health; soil; water; air; climatic factors; material assets; cultural heritage (including architectural and archaeological heritage); and landscape.

4 Methodology

4.1 Introduction

4.1.1 The process of sustainability appraisal uses geographic information, the SA Framework and established standards (where available) to inform the assessment decisions and provide transparency.

4.1.2 Development proposals and policies set out in the BLPSV-PC have been assessed against the SA Framework (see **Appendices B and C**). The SA Framework is comprised of SA Objectives and decision-making criteria. Acting as yardsticks of sustainability performance, the SA Objectives are designed to represent the topics identified in Annex 1(f)[18] of the SEA Directive. Including the SEA topics in the SA Objectives helps ensure that all of the environmental criteria of the SEA Directive are included. Consequently, the 14 SA Objectives reflect all subject areas to ensure the assessment process is transparent, robust and thorough. The SA Objectives and the SEA Topics to which they relate are set out in **Table 4.1**.

4.1.3 Each SA Objective is considered when appraising BLPSV-PC site proformas and policies. It is important to note that the order of SA Objectives in the SA Framework does not infer prioritisation. The SA Objectives are at a strategic level and can potentially be open-ended. In order to focus each objective, decision making criteria are presented in the SA Framework to be used during the appraisal of policies and sites.

[18] Annex 1(f) identifies: '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'.

Table 4.1: Summary of the SA Objectives

SA Objectives		Relevance to SEA Directive - Annex 1(f)
1	**Climate change:** Minimise the borough's contribution to climate change and plan for the anticipated levels of climate change.	Climate change.
2	**Water and flooding:** Protect, enhance and manage RBWM's waterways and to sustainably manage water resources.	Water
3	**Air and noise pollution:** Manage and reduce the risk of pollution, including air and noise pollution.	Air and noise.
4	**Biodiversity and geodiversity:** Protect, enhance and manage the natural heritage of the borough.	Biodiversity and geodiversity.
5	**Landscape quality:** Conserve, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening its distinctiveness.	Landscape, historic environment.
6	**Cultural heritage:** Conserve, enhance and manage sites, features and areas of historic and cultural importance.	Cultural heritage
7	**Use of resources:** Ensure protection, conservation and efficient use of natural and man-made resources in the borough.	Climate change and soil.
8	**Housing:** Provide a range of housing to meet the needs of the community.	Housing, population and quality of life.
9	**Health:** Safeguard and improve physical and mental health of residents.	Population, quality of life and human health.
10	**Community safety and wellbeing:** Reduce poverty and social deprivation and increase community safety.	Population, quality of life and human health.
11	**Transport and accessibility:** Improve choice and efficiency of sustainable transport in the borough and reduce the need to travel.	Accessibility, climate change and material assets.
12	**Education:** Improve education, skills and qualifications in the borough.	Population and economic factors.
13	**Waste:** Ensure the sustainable management of waste.	Material assets, air, soil, water.
14	**Economy and employment:** To support a strong, diverse, vibrant and sustainable local economy to foster balanced economic growth.	Economic factors.

4.2 Integrated approach to SA and SEA

4.2.1 The SEA Directive applies to a wide range of public plans and programmes, including land use plans (see Article 3(2)) of the SEA Directive[19]). The Directive has been transposed into English law by the Environmental Assessment of Plans and Programmes Regulations 2004 (the SEA Regulations, SI no. 1633[20]).

4.2.2 SEA is a systematic process for evaluating the environmental consequences of proposed plans or programmes to ensure environmental issues are fully integrated and addressed at the earliest appropriate stage of decision-making. The SEA Directive and SEA Regulations necessitate an environmental report in which the likely significant effects on the environment are identified for Local Plan proposals and reasonable alternatives.

4.2.3 SA is a UK-specific procedure used to appraise the impacts and effects of development plans in the UK. It is required by S19 (5) of the Planning and Compulsory Purchase Act 2004 and should be an appraisal of the economic, social and environmental sustainability of development plans. The present statutory requirement for SA lies in The Town and Country Planning (Local Planning) (England) Regulations 2012.

4.3 Best practice guidance

4.3.1 The requirements to carry out SA and SEA are distinct, although it is possible to satisfy both obligations using a single appraisal process. Government policy recommends that both SA and SEA are undertaken under a single SA process, which incorporates the requirements of the SEA Directive. A range of documents have been utilised in preparing this report:

- European Commission (2004) Implementation of Directive 2001/42 on the assessment of the effects of certain plan and programmes on the environment[21].

[19] SEA Directive. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32001L0042 [Date Accessed: 30/09/19]

[20] The Environmental Assessment of Plans and Programmes Regulations 2004. Available at: http://www.legislation.gov.uk/uksi/2004/1633/contents/made [Date Accessed: 30/09/19]

[21] European Commission (2004) Implementation of Directive 2001/42 on the assessment of the effects of certain plan and programmes on the environment. Available at: http://ec.europa.eu/environment/archives/eia/pdf/030923_sea_guidance.pdf [Date Accessed: 30/09/19]

- Office of Deputy Prime Minister (2005) A Practical Guide to the SEA Directive[22].
- Ministry of Housing, Communities and Local Government (2019) National Planning Policy Framework (NPPF)[23].
- Ministry of Housing, Communities and Local Government (2018) Planning Practice Guidance (PPG)[24].
- Royal Town Planning Institute (2018) Strategic Environmental Assessment, Improving the effectiveness and efficiency of SEA/SA for land use plans[25].

4.4 Appraisal process

4.4.1 The appraisal process has used the SA Framework, the review of plans, programmes and policies and the baseline (including various mapped data sources), as presented in the SA Scoping Report[26], to assess each option. Assessments have been undertaken using this empirical evidence and, where appropriate, combined with professional judgement.

4.4.2 When evaluating the significance of impacts, the SA/SEA draws on criteria in Annex II of the SEA Directive (see **Table 4.2**) and identifies a significance value using the guide in **Table 4.4**.

[22] Office of Deputy Prime Minister (2005) A Practical Guide to the SEA Directive. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7657/practicalguidesea.pdf [Date Accessed: 30/09/19]

[23] MHCLG (2019) NPPF. Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2 [Date Accessed: 30/09/19]

[24] MHCLG (2019) Planning practice guidance. Available at: https://www.gov.uk/government/collections/planning-practice-guidance [Date Accessed: 30/09/19]

[25] Royal Town Planning Institute (2018) Strategic Environmental Assessment, Improving the effectiveness and efficiency of SEA/SA for land use plans. Available at: http://www.rtpi.org.uk/media/2668152/sea-sapracticeadvicefull2018c.pdf [Date Accessed: 30/09/19]

[26] Lepus Consulting (2016) Sustainability Appraisal of the Royal Borough of Windsor and Maidenhead Local Plan: Scoping Report. Available at: https://www3.rbwm.gov.uk/downloads/file/3210/sustainability_appraisal_scoping_report_%E2%80%93_oct_2016 [Date Accessed: 30/09/19]

Table 4.2: *Annex II of the SEA Directive*[27]

Criteria for determining the likely significance of effects referred to in Article 3(5) of the SEA Directive
The characteristics of plans and programmes, having regard, in particular, to: • the degree to which the plan or programme sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources; • the degree to which the plan or programme influences other plans and programmes including those in a hierarchy; • the relevance of the plan or programme for the integration of environmental considerations in particular with a view to promoting sustainable development; • environmental problems relevant to the plan or programme; and • the relevance of the plan or programme for the implementation of Community legislation on the environment (e.g. plans and programmes linked to waste- management or water protection).
Characteristics of the effects and of the area likely to be affected, having regard, in particular, to: • the probability, duration, frequency and reversibility of the effects; • the cumulative nature of the effects; • the transboundary nature of the effects; • the risks to human health or the environment (e.g. due to accidents); • the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected); • the value and vulnerability of the area likely to be affected due to: o special natural characteristics or cultural heritage; o exceeded environmental quality standards or limit values; o intensive land-use; and • the effects on areas or landscapes which have a recognised national, Community or international protection status.

4.5 Impact assessment and determination of significance

4.5.1 Significance of effect is assessed by considering a combination of the sensitivity of a receptor and magnitude of change. The level of impact can be expressed in relative terms, based on the principle that the more sensitive the resource and, the greater the magnitude of the change, as compared with the do-nothing scenario, the greater will be the significance of effect.

[27] SEA Directive. Available at: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32001L0042 [Date Accessed: 30/09/19]

4.6 Sensitivity

4.6.1 Sensitivity has been measured through consideration as to how the receiving environment will be impacted by a plan proposal. This includes assessment of the value and vulnerability of the receiving environment, whether or not environmental quality standards will be exceeded, and for example, if impacts will affect designated biodiversity sites or nationally important landscapes.

4.6.2 A guide to the range of scales used in determining impact sensitivity is presented in **Table 4.3.** For most receptors, sensitivity increases with geographic scale.

Table 4.3: Impact sensitivity

Scale	Typical criteria
International/ national	Designations that have an international aspect or consideration of transboundary effects beyond national boundaries. This applies to effects and designations/receptors that have a national or international dimension.
Regional	This includes the regional and sub-regional scale, including county-wide level and regional areas.
Local	This is the district and neighbourhood scale.

4.7 Magnitude

4.7.1 Magnitude relates to the degree of change the receptor will experience, including the probability, duration, frequency and reversibility of the impact. Impact magnitude has been determined on the basis of the susceptibility of a receptor to the type of change that will arise, as well as the value of the affected receptor (see **Table 4.4**).

Table 4.4: Impact magnitude

Impact magnitude	Typical criteria
High	Likely total loss of or major alteration to the receptor in question; • Provision of a new receptor/feature; or • The impact is permanent and frequent.
Medium	Partial loss/alteration/improvement to one or more key features; or The impact is one of the following: • Frequent and short-term; • Frequent and reversible; • Long-term (and frequent) and reversible; • Long-term and occasional; or • Permanent and occasional.
Low	Minor loss/alteration/improvement to one or more key features of the receptor; or The impact is one of the following: • Reversible and short-term; • Reversible and occasional; or • Short-term and occasional.

4.8 Significant effects

4.8.1 Through a consideration of the sensitivity of receptors and magnitude of change likely to be experienced, the level of impact can be assessed.

4.8.2 A single value from **Table 4.5** has been allocated to each SA Objective for each assessment. Justification for the classification of the impact for each SA objective is presented in an accompanying narrative assessment text for all reasonable alternatives that have been assessed through the SA process. The assessment of impacts and subsequent evaluation of significant effects is in accordance with the footnote of Annex 1(f) of the SEA Directive, where feasible, which states:

"These effects should include secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects".

Table 4.5: Guide to scoring significant effects

Significance	Definition (not necessarily exhaustive)
Major Negative --	The size, nature and location of a development proposal or policy would be likely to: • Permanently degrade, diminish or destroy the integrity of a quality receptor, such as a feature of international, national or regional importance; • Cause a very high-quality receptor to be permanently diminished; • Be unable to be entirely mitigated; • Be discordant with the existing setting; and/or • Contribute to a cumulative significant effect.
Minor Negative -	The size, nature and location of development proposal or policy would be likely to: • Not quite fit into the existing location or with existing receptor qualities; and/or • Affect undesignated yet recognised local receptors.
Negligible 0	Either no impacts are anticipated, or any impacts are anticipated to be negligible.
Uncertain +/-	It is entirely uncertain whether impacts would be positive or adverse.
Minor Positive +	The size, nature and location of a development proposal or policy would be likely to: • Improve undesignated yet recognised receptor qualities at the local scale; • Fit into, or with, the existing location and existing receptor qualities; and/or • Enable the restoration of valued characteristic features.
Major Positive ++	The size, nature and location of a development proposal or policy would be likely to: • Enhance and redefine the location in a positive manner, making a contribution at a national or international scale; • Restore valued receptors which were degraded through previous uses; and/or • Improve one or more key elements/features/characteristics of a receptor with recognised quality such as a specific international, national or regional designation.

4.8.3 When selecting a single value to best represent sustainability performance, and to understand the significance of effects in terms of the relevant SA Objective, the precautionary principle[28] has been used. This is a worst-case scenario approach.

4.8.4 If a positive effect is identified in relation to one criterion within the SA Framework (see the second column of the SA Framework in **Appendix A**) and a negative effect is identified in relation to another criterion within the same SA Objective, the overall impact has been assigned as negative for that objective. It is therefore essential to appreciate that the impacts are indicative summarily and that the accompanying assessment text provides a fuller explanation of sustainability performance.

4.8.5 The assessment considers, on a strategic basis, the degree to which a location can accommodate change without adverse effects on valued or important receptors (identified in the baseline).

4.8.6 The level of impact has been categorised as negligible, minor or major. **Table 4.5** sets out the levels of significance and explains the terms used. The nature of the impact can be either positive or negative depending on the type of development and the design and mitigation measures proposed.

4.8.7 Each reasonable alternative site, preferred site allocation and policy has been assessed for likely significant impacts against each SA Objective in the Framework, as per **Table 4.5.** Likely impacts are not intended to be summed.

4.8.8 It is important to note that the assessment scores used in **Table 4.5** are high level indicators. The assessment narrative should always be read alongside the significance score. Topic specific methods and assumptions in **Table 4.6** offers further insight into how each impact was identified.

[28] The European Commission describes the precautionary principle as follows: *"If a preliminary scientific evaluation shows that there are reasonable grounds for concern that a particular activity might lead to damaging effects on the environment, or on human, animal or plant health, which would be inconsistent with protection normally afforded to these within the European Community, the Precautionary Principle is triggered".*

4.9 Limitations of predicting effects

4.9.1 SA is a tool for predicting potential significant effects. Predicting effects relies on an evidence-based approach and incorporates professional judgement. It is often not possible to state with absolute certainty whether effects will occur, as many impacts are influenced by a range of factors such as the design and the success of mitigation measures.

4.9.2 The assessments in this report are based on the best available information, including that provided by the Council and information that is publicly available. The assessment of reasonable alternatives is somewhat limited in terms of available data resources. For example, up to date ecological surveys and/or landscape and visual impact assessments have not been available. Every attempt has however been made to predict effects as accurately as possible.

4.9.3 SA operates at a strategic level which uses available secondary data for the relevant SA Objective. Sometimes, in the absence of more detailed information, forecasting the potential impacts of development can require making reasonable assumptions based on the best available data and trends. However, all reasonable alternatives must be assessed in the same way.

4.9.4 All reasonable alternatives have been assessed in relation to potential effects against each SA Objective. However, for the sake of brevity and to maintain the readability of the report, where the assessment finds there are likely to be negligible effects as a consequence of the allocation of a site this is not described in the accompanying text.

4.10 SEA Topic methodologies and assumptions

4.10.1 A number of topic specific methodologies and assumptions have been applied to the appraisal process for specific SA Objectives (see **Table 4.6**). These should be borne in mind when considering the assessment findings.

Table 4.6: *Assumptions and topic specific methodologies for each SA Objective.*

SA Objective	Assumptions
1 – Climate Change Mitigation	**Carbon Emissions** Development proposals which would be likely to increase greenhouse gas (GHG) emissions in the local area would make it more difficult for the Council to reduce the Plan area's contribution towards the causes of climate change. It is assumed that development on previously undeveloped sites or greenfield land would result in an increase in local GHG emissions due to the increase in the local population and the local number of operating businesses and occupied homes. The increase in GHG emissions caused by new developments is associated with impacts of the construction phase, the occupation and operation of homes and businesses, oil, gas and coal consumption and increases in local road transport with associated emissions. This impact is considered to be permanent and non-reversible. The estimated carbon emissions for the Plan area in 2017 totalled 850,900 tonnes CO2/year. The average carbon emissions per person per year was 5.7 tonnes[29]. Development proposals which could potentially increase the Plan area's carbon emissions by 1% or more in comparison to the 2017 estimate would be expected to have a major negative impact for this objective. Development proposals which could potentially increase the Plan area's carbon emissions by 0.1% or more in comparison to the 2017 estimate would be expected to have a minor negative impact for this objective. For the purpose of this report, this threshold has been deduced from available guidance[30]. As carbon emissions have been calculated per person per dwelling, development proposals proposed for employment or non-residential end use have not been included in this assessment. Sites and policies that are proposed for development which would result in a less than 0.1% increase in carbon emissions in comparison to the 2017 estimate, or are proposed for other end uses, would be expected to have a negligible impact on carbon emissions across the Plan area.

[29] Department for Business, Energy and Industrial Strategy (2019) UK local authority and regional carbon dioxide emissions national statistics: 2005-2017. Available at: https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2017 [Date Accessed: 08/10/19]

[30] DTA Publications (2017) The Habitats Regulations Assessment Journal: Air Pollution.

SA Objective	Assumptions
	This negative impact is considered to be permanent and non-reversible with limited scope for mitigation.
2 – Water and Flooding	**Fluvial Flooding** The level of fluvial flood risk present across the Plan area is based on the Environment Agency's flood risk data[31], such that: • Flood Zone 3: 1% - 3.3+% chance of flooding each year; • Flood Zone 2: 0.1% - 1% chance of flooding each year; and • Flood Zone 1: Less than 0.1% chance of flooding each year. It is assumed that development proposals will be in perpetuity and it is therefore likely that development will be subject to the impacts of flooding at some point in the future, should it be situated on land at risk of fluvial flooding. Where development proposals coincide with Flood Zone 2, a minor negative impact would be expected. Where development proposals coincide with Flood Zone 3 (either Flood Zone 3a or 3b), a major negative impact would be expected. Where development proposals are located within Flood Zone 1, a minor positive impact would be expected for 'water and flooding'. **Pluvial Flooding** Areas determined to be at high risk of pluvial flooding have more than a 3.3% chance of flooding each year, medium risk between 1% and 3.3%, and low-risk between 0.1% and 1% chance. Development proposals located in areas at low and medium risk of surface water flooding would be expected to have a minor negative impact on pluvial flooding. Development proposals located within areas at high risk of surface water flooding would be expected to have a major negative impact on pluvial flooding. Where development proposals are not located in areas determined to be at risk of pluvial flooding, a negligible impact would be expected. It is assumed that development proposals will be in perpetuity and it is therefore likely that development would be subject to the impacts of flooding at some point in the future, should it be situated on land at risk of surface water flooding.

[31] Environment Agency (2015) Flood Map for Planning Risk. Available at: http://apps.environment-agency.gov.uk/wiyby/cy/151263.aspx [Date Accessed: 08/10/19]

SA Objective	Assumptions
	Groundwater: The vulnerability of groundwater to pollution is determined by the physical, chemical and biological properties of the soil and rocks, which control the ease with which an unprotected hazard can affect groundwater. Groundwater Source Protection Zones (SPZs) indicate the risk to groundwater supplies from potentially polluting activities and accidental releases of pollutants. As such, any development proposal that is located within a groundwater SPZ could potentially have an adverse impact on groundwater quality. Development proposals located within the total catchment (Zone III), outer zone (Zone II) or inner zone (Zone I) of an SPZ would be likely to have a minor negative impact on groundwater quality. **Water demand:** It is assumed that development proposals would be in accordance with the national mandatory water efficiency standard of 125 litres per person per day, as set out in the 2010 Building Regulations[32]. It is assumed that all housing proposals in the BLPSV-PC would be subject to appropriate approvals and licencing for sustainable water supply from the Environment Agency.
3 – Air and Noise Pollution	Exposure of new residents to air pollution has been considered in the context of the development proposal location in relation to established Air Quality Management Areas (AQMAs) and main roads. It is widely accepted that the impacts of air pollution from road transport decreases with distance from the source of pollution i.e. the road carriageway. The Department for Transport (DfT) in their Transport Analysis Guidance (TAG) consider that, *"beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant"*[33]. This statement is supported by Highways England and Natural England based on evidence presented in a number of research papers[34] [35]. A buffer distance of 200m has therefore been applied in this assessment. It is assumed that development would result in an increase in traffic and thus traffic generated air pollution. Both existing and future site users would be

[32] The Building Regulations 2010. Available at: http://www.legislation.gov.uk/uksi/2010/2214/contents/made [Date Accessed: 14/10/19]

[33] Department for Transport (2019) TAG unit A3 Environmental Impact Appraisal. Available at: https://www.gov.uk/government/publications/tag-unit-a3-environmental-impact-appraisal [Date Accessed; 08/10/19]

[34] Bignal, K., Ashmore, M & Power, S. 2004. The ecological effects of diffuse air pollution from road transport. English Nature Research Report No. 580, Peterborough.

[35] Ricardo-AEA, 2016. The ecological effects of air pollution from road transport: an updated review. Natural England Commissioned Report No. 199.

SA Objective	Assumptions
	exposed to this change in air quality. Residential sites proposed for the development of between ten and 99 dwellings would therefore be expected to have a minor negative impact on local air pollution[36]. Residential sites proposed for the development of 100 dwellings or more would be expected to have a major negative impact. Employment sites which propose the development of between 1ha and 9.9ha of employment space would be expected to have a minor negative impact and sites which propose 10ha or more would be expected to have a major negative impact. Where a development proposal is proposed for the development of nine dwellings or less, or for 0.99ha of employment floorspace or less, a negligible impact on local air quality would be anticipated. The proximity of a development proposal in relation to a main road determines the exposure level of site end users to road related air and noise emissions[37]. In line with the DMRB guidance, it is assumed that site end users would be most vulnerable to these impacts within 200m of a main road. This distance has therefore been applied throughout this assessment to both existing road and rail sources. Development proposals located within 200m of a main road would be expected to have a minor negative impact on site end users' exposure to air and/ or noise pollution. Development proposals located over 200m from a main road would be expected to have a negligible impact on site end users' exposure to noise and vibration pollution. Development proposals located within 200m of a railway line would be expected to have a minor negative impact on site end users' exposure to noise pollution and vibrations. Development proposals located over 200m from a railway line would be expected to have a negligible impact on site end users' exposure to noise pollution and vibrations.
4 – Biodiversity and Geodiversity	The biodiversity and geodiversity objective considers adverse impacts of the proposed development at a landscape-scale. It focuses on an assessment of proposed development on a network of designated and undesignated sites, wildlife corridors and individual habitats within the Plan area. These ecological receptors include the following:

[36] Institute of Air Quality Management (2017) Land-Use Planning & Development Control: Planning for Air Quality. Paragraph 5.8.

[37] Design Manual for Roads and Bridges, Volume 11: Environmental Assessment, Section 3: Environmental Assessment Techniques, Part 1: Air Quality, Annex D2: Road Type. Available at: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section3/ha20707.pdf [Date Accessed 08/10/19]

SA Objective	Assumptions
	Designated Sites: • Natura 2000 sites; (Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites). • Sites of Special Scientific Interest (SSSI). • National Nature Reserves (NNR). • Local Nature Reserves (LNR). • Local Wildlife Sites (LWS). • Local Geological Sites (LGS). **Habitats and Species:** • Ancient woodland. • Priority habitats. The area within which development has the potential to have a direct/ indirect adverse impact on the integrity of a European site (SAC, SPA and Ramsar sites) is referred to as the zone of influence. For the purposes of this report, a 5km zone of influence has been used to consider pressures and threats on European sites as a result of the development proposed. Research suggests that this is the 'zone' in which public access/ disturbance threats and pressures are likely to be exacerbated at European sites as a result of development. Where a development proposal is coincident with, adjacent to or located in close proximity of an ecological receptor, it is assumed that negative impacts associated with development will arise to some extent. These negative impacts include those that occur during the construction phase and are associated with the construction process and construction vehicles (e.g. habitat loss, habitat fragmentation, habitat degradation, noise, air, water and light pollution) and those that are associated with the operation/occupation phases of development (e.g. public access associated disturbances, increases in local congestion resulting in a reduction in air quality, changes in noise levels, visual disturbance, light pollution, impacts on water levels and quality etc.). Negative impacts would be expected where the following ecological designations may be harmed or lost as a result of proposals: SPAs, SACs, Ramsar sites, SSSIs, ancient woodlands, NNRs, LNRs and LWSs as well as priority habitats[38] protected under the 2006 NERC Act[39]. The assessment is largely based on a consideration of the proximity of a development proposal to these ecological receptors.

[38] Source Natural England Priority Habitat Inventory, April 2012

[39] Natural Environment and Rural Communities Act 2006. Available at: http://www.legislation.gov.uk/ukpga/2006/16/contents [Date Accessed: 08/10/19]

SA Objective	Assumptions
	For the purposes of this assessment, impacts on priority habitats have been considered in the context of Natural England's publicly available Priority Habitat Inventory database[40]. It is acknowledged this may not reflect current local site conditions in all instances. It is assumed that construction and occupation of previously undeveloped greenfield land would result in a net reduction in vegetation cover in the Plan area. This would also be expected to lead to greater levels of fragmentation and isolation for the wider ecological network, such as due to the loss of stepping stones and corridors. This will restrict the ability of ecological receptors to adapt to the impacts of climate change. The loss of greenfield land is considered under the Use of Resources objective (SA Objective 7) in this assessment. It should be noted that no detailed ecological surveys have been completed by Lepus to inform the assessments made in this report. Protected species survey information is not available for the development proposals within the Plan area. It is acknowledged that data is available from the local biological records centre. However, it is noted that this data may be under recorded in certain areas. This under recording does not imply species absence. As a consequence, consideration of this data on a site-by-site basis within this assessment would have the potential to skew results, favouring well recorded areas of the Plan area. As such impacts on protected species have not been assessed on a site-by-site basis. It is anticipated that the Council will require detailed ecological surveys and assessments to accompany future planning applications. Such surveys will determine on a site-by-site basis the presence of Priority Species and Priority Habitats protected under the NERC Act. It is assumed that mature trees and hedgerows will be retained where possible. Natural England has developed Impact Risk Zones (IRZs) for each SSSI unit in the country. IRZs are a Geographical Information System (GIS) tool which allow a rapid initial assessment of the potential risks posed by development proposals to: SSSIs, SACs, SPAs and Ramsar sites. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts[41]. Where a development proposal falls within more than one

[40] Natural England (2019) Priority Habitat Inventory (England). Available at: https://data.gov.uk/dataset/4b6ddab7-6c0f-4407-946e-d6499f19fcde/priority-habitat-inventory-england [Date Accessed: 08/10/19]

[41] Natural England (2017) Natural England's Impact Risk Zones for Sites of Special Scientific Interest, 12 February 2019. Available at: https://data.gov.uk/dataset/5ae2af0c-1363-4d40-9d1a-e5a1381449f8/sssi-impact-risk-zones [Date Accessed: 08/10/19]

SA Objective	Assumptions
	SSSI IRZ the worst-case risk zone is reported upon in the assessment. The IRZ attribute data draws a distinction between rural and non-rural development. For the purposes of this assessment non-rural sites are considered to be those that are located within an existing built-up area. Development proposals at greenfield locations at the edge of a settlement or those that are more rural in nature have been considered to be rural. Where development proposals coincide with a Natura 2000 site, a SSSI, NNR, LNR, LWS or ancient woodland, or are adjacent to a Natura 2000 site, SSSI or NNR, it is assumed that development would have a permanent and irreversible impact on these nationally important biodiversity assets, and a major negative impact would be expected. Where development proposals coincide with priority habitats, are adjacent to an ancient woodland, LNR or LWS, are located within a SSSI IRZ which states to *"consult Natural England"* or are located in close proximity to a Natura 2000 site, SSSI, NNR, LNR or stand of ancient woodland, a minor negative impact would be expected. Where a development proposal would not be anticipated to impact a biodiversity asset, a negligible impact would be expected for this objective.
5 – Landscape Quality	Impacts on landscape will be largely determined by the specific layout and design of development proposals, as well as the site-specific landscape circumstances, as experienced on the ground. Detailed designs of each development proposal are uncertain at this stage of the assessment. Furthermore, this assessment comprises a desk-based exercise which has not been verified in the field. Therefore, the nature of the potential impacts on the landscape are, to an extent, uncertain. However, there is a risk of negative impacts occurring, some of which may be unavoidable. As such, this risk has been reflected in the assessment as a negative impact where a development proposal is located in close proximity to sensitive landscape receptors. The level of impact has been assessed based on the nature and value of, and proximity to, the landscape receptor in question. **The Chilterns AONB:** The Chilterns Area of Outstanding Natural Beauty (AONB) is a nationally designated landscape. The Chilterns AONB Management Plan 2014-2019[42] sets out 17 policies that aim to protect the landscape character of the AONB and ensure future development is appropriate to its setting.

[42] The Chilterns Conservation Board (2014) Chilterns Area of Outstanding Natural Beauty Management Plan 2014-2019: A Framework for Action. Available at: https://www.chilternsaonb.org/uploads/files/ConservationBoard/ManagementPlan/Management%20Plan%202014-19/chilterns_management_plan_2014-19_final.pdf [Date Accessed: 08/10/19]

SA Objective	Assumptions
	Development proposals which may be visible from, or which may affect the appreciation of the special qualities of the Chilterns AONB, are assumed to have an impact on the setting of the AONB and a minor negative impact on this landscape receptor would be expected. **Discordant with LCA:** Baseline data on Landscape Character Types and Character Areas within the Plan area are derived from the 2004 Landscape Character Assessment for the Royal Borough of Windsor and Maidenhead[43]. Key characteristics of each Landscape Character Area have informed the appraisal of each development proposal against the landscape objective. Given that the detailed nature of the landscape in relation to each development proposal is unknown, the assessment of impact is based on the overall landscape character guidelines and key characteristics. Development proposals which are considered to be potentially discordant with the guidelines and characteristics provided in the published Landscape Character Assessment would be expected to have a minor negative impact on the landscape objective. Development proposals located within areas classed as 'urban' within the Landscape Character Assessment, and therefore comprise built-up areas, have been excluded from this assessment. **Views:** Development proposals which could potentially alter views of a predominantly rural or countryside landscape experienced by users of the Public Rights of Way (PRoW) network and/ or local residents would be expected to have a minor negative impact on the landscape objective. In order to consider potential visual impacts of development, it has been assumed that the proposals would broadly reflect the character of nearby development of the same type. Potential views from residential properties are identified through reference to aerial mapping and the use of Google Maps[44]. It is anticipated that the Council will require developers to undertake Landscape and Visual Impact Assessments (LVIAs) to accompany any future proposals, where relevant. The LVIAs should seek to provide greater detail in relation to the landscape character of the development proposal and its surroundings, the views available towards the development proposal, the character of those views and the sensitivity and value of the relevant landscape and visual receptors.

[43] LDA Design (2004) Landscape Character Assessment for the Royal Borough of Windsor and Maidenhead, Part 1: Landscape Character Assessment. Available at: http://consult.rbwm.gov.uk/file/4861318 [Date Accessed: 08/10/19]

[44] Google Maps (no date) Available at: https://www.google.co.uk/maps [Date Accessed: 08/10/19]

SA Objective	Assumptions
	Urban Sprawl/ Coalescence: Development proposals which are considered to increase the risk of future development spreading further into the wider landscape would be expected to have a minor negative impact on the landscape objective. Development proposals which are considered to reduce the separation between existing settlements and increase the risk of the coalescence of settlements would be expected to have a potential minor negative impact on the landscape objective.
6 – Cultural Heritage	Impacts on heritage assets will be largely determined by the specific layout and design of development proposals, as well as the nature and significance of the heritage asset. There is a risk of adverse impacts occurring, some of which may be unavoidable. As such, this risk has been reflected in the assessment as a negative impact where a development proposal is in close proximity to heritage assets. Adverse impacts are recorded for options which have the potential to have an adverse impact on sensitive heritage designations, including Listed Buildings, Scheduled Monuments (SM), Registered Parks and Gardens (RPG), and Conservation Areas. It is assumed that where a designated heritage asset coincides with a development proposal, the heritage asset will not be lost as a result of development (unless otherwise specified in the BLPSV-PC). Adverse impacts on heritage assets are predominantly associated with impacts on the existing setting of the asset and the character of the local area, as well as adverse impacts on views of, or from, the asset. **Setting:** Development which could potentially be discordant with the local character or setting, for example; due to design, layout, scale or type, would be expected to adversely impact the setting of nearby heritage assets that are important components of the local area. Views of, or from, the heritage asset are considered as part of the assessment of potential impacts on the setting of the asset. **Heritage Assets:** Where a Grade I, Grade II* or Grade II Listed Building, SM or RPG coincides with a development proposal, it is assumed that the setting of these features will be permanently altered, and a major negative impact would be expected. Where a development proposal lies adjacent to a Grade I Listed Building it is assumed

SA Objective	Assumptions
	that the proposal would also permanently alter the setting to the asset and a major negative impact on the historic environment would be expected. Where the development proposal lies adjacent to, or in close proximity to, a Grade II* or Grade II Listed Building, a SM, or an RPG, or where the development proposal lies in close proximity to a Grade I Listed Building, an adverse impact on the setting of the asset would be likely, to some extent, and a minor negative impact would therefore be expected. Potential impacts on Conservation Areas and their setting are recorded as minor negative impacts. Archaeological features have been identified across the Plan area. Development proposals which are coincident with or are located adjacent to an archaeological feature would be likely to have a minor negative impact on the local historic environment. Where development proposals are not located in close proximity to any heritage asset, or the nature of development is determined not to affect the setting or character of the nearby heritage asset, a negligible impact would be expected for this objective. It is anticipated that the Council would require a Heritage Statement to be prepared to accompany future planning applications, where appropriate. The Heritage Statement should describe the significance of any heritage assets affected by the proposals, including any contribution made by their settings.
7 – Use of Resources	**Previously Developed Land:** In accordance with the core planning principles of the NPPF[45], development on previously developed land is recognised as an efficient use of land. Development of previously undeveloped land and greenfield sites is not considered to be an efficient use of land. Development of an existing brownfield site would be expected to contribute positively to safeguarding greenfield land in RBWM, and therefore, have a minor positive impact on this objective. Development proposals situated on previously undeveloped land would be expected to pose a threat to soil within the development proposal perimeter due to excavation, compaction, erosion and an increased risk of pollution and contamination during construction. In addition, development proposals which would result in the loss of greenfield land would be expected to contribute towards a cumulative loss of ecological

[45] MHCLG (2019) National Planning Policy Framework. Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2 [Date Accessed: 08/10/19]

SA Objective	Assumptions
	habitat. This would be expected to lead to greater levels of habitat fragmentation and isolation for the local ecological network restricting the ability of ecological receptors to adapt to the impacts of climate change. The loss of greenfield land has therefore been considered to have an adverse impact under this objective. For the purpose of this report, a 20ha threshold has been used based on available guidance[46]. Development proposals which would result in the loss of less than 20ha of greenfield land would be expected to have a minor negative impact on this objective. Development proposals which would result in the loss of 20ha or more of greenfield land would be expected to have a major negative impact on this objective. **Agricultural Land Classification:** The Agricultural Land Classification (ALC) system classifies land into five categories according to versatility and suitability for growing crops. The top three grades, Grades 1, 2 and 3a, are referred to as the Best and Most Versatile (BMV) land[47]. Adverse impacts are expected for development proposals which would result in a net loss of agriculturally valuable soils. Development proposals which are situated on Grade 1, 2 or 3 ALC land, and would therefore risk the loss of some of the Plan area's BMV land, would be expected to have a minor negative impact for this objective. Development proposals which are situated on Grade 4 and 5 ALC land, or land classified as 'urban' or 'non-agricultural' and would therefore help prevent the loss of the Plan area's BMV land, would be expected to have a minor positive impact for this objective. **Mineral Safeguarding Areas:** Mineral Safeguarding Areas (MSAs) have been identified across the borough for their sand and gravel resources. Development proposals which are not coincident with an MSA would be expected to have a minor positive impact on local resources.

[46] Natural England (2009) Agricultural Land Classification: protecting the best and most versatile agricultural land. Available at: http://publications.naturalengland.org.uk/publication/35012 [Date Accessed: 08/10/19]

[47] Ministry of Agriculture, Fisheries and Food (1988) Agricultural Land Classification of England and Wales: Revised criteria for grading the quality of agricultural land. Available at: http://publications.naturalengland.org.uk/publication/6257050620264448?category=5954148537204736 [Date Accessed: 08/10/19]

SA Objective	Assumptions
	Land identified for mineral extraction of less than 3ha is not likely to be viable. Therefore, development proposals where less than 3ha of the site coincides with an MSA would be expected to have a negligible impact in regard to mineral extraction. Development proposals where 3ha or more of the site coincides with an MSA would be expected to have a minor negative impact in regard to mineral extraction. Note: Information of MSAs in RBWM was not available at the time of the reasonable alternative site assessments.
8 - Housing	Development proposals which would result in an increase of 99 dwellings or less would be likely to have a minor positive impact on the local housing provision. Development proposals which would result in an increase of 100 dwellings or more would be likely to have a major positive impact on the local housing provision. Unless otherwise stated, it is assumed development options will provide a good mix of housing type and tenure opportunities. Development proposals which would be expected to result in a net loss of housing across the Plan area would be expected to have an adverse impact on the Council's ability to meet the required housing demand. Development proposals which would result in no net change in dwellings would be expected to have a negligible impact on the local housing provision.
9 – Human Health	**Health Facilities:** In order to facilitate healthy and active lifestyles for existing and new residents, it is expected that the BLPSV-PC should seek to ensure that residents have access to NHS hospitals, GP surgeries, leisure centres and a diverse range of accessible natural habitats and the surrounding PRoW network. Sustainable distances to each of these necessary services are derived from Barton *et al.*[48]. Adverse impacts are anticipated where the proposed development would not be expected to facilitate active and healthy lifestyles for current or future residents. For the purposes of this assessment, accessibility to a hospital has been taken as proximity to an NHS hospital. NHS hospitals located within, or in close proximity to, the borough include St Mark's Hospital, The Princess Margaret Hospital, Upton Hospital Heatherwood Hospital, Marlow Community Hospital and Wexham Park Hospital.

[48] Barton, H., Grant. M. & Guise. R. (2010) Shaping Neighbourhoods: For local health and global sustainability, January 2010

SA Objective	Assumptions
	Development proposals located within 5km of one of these hospitals would be expected to have a minor positive impact on site end users' access to emergency health services. Development proposals located over 5km from these hospitals would be likely to have a minor negative impact on site end users' access to emergency health care. There are numerous GP surgeries located across the Plan area. Development proposals located within 800m of a GP surgery would be expected to have a minor positive impact on site end users' access to this essential health service. Development proposals located over 800m from a GP surgery would be likely to have a minor negative impact on site end users' access to essential health care. Access to leisure centres can provide local residents with opportunities to facilitate healthy lifestyles through exercise. Development proposals located within 1.5km of a leisure centre would be expected to have a minor positive impact on site end users' access to these facilities. Development proposals located over 1.5km from a leisure centre would be likely to have a minor negative impact on site end users' access to these facilities. **Public Greenspace/ PRoW or Cycle Network:** Development proposals have been assessed in terms of their access to the local PRoW networks and public greenspace. In line with Barton *et al.*[49], a sustainable distance of 600m has been used for the assessments. Development proposals that are located within 600m of a PRoW/ cycle path or a public greenspace would be expected to have a minor positive impact on site end users' access to a diverse range of natural habitats. Development proposals located over 600m from a PRoW/ cycle path or a public greenspace could potentially have a minor negative impact on site end users' access to natural habitats, and therefore have an adverse impact on the physical and mental health of local residents. **Air Quality:** It is assumed that development proposals located in close proximity to main roads would expose site end users to transport associated noise and air pollution. In line with the DMRB guidance, it is assumed that receptors would be most vulnerable to these impacts located within 200m of a main road[50]. Negative impacts on the long-term health of site end users would be anticipated where residents would be exposed to air pollution.

[49] Barton, H., Grant. M. & Guise. R. (2010) Shaping Neighbourhoods: For local health and global sustainability, January 2010

[50] Design Manual for Roads and Bridges, Volume 11: Environmental Assessment, Section 3: Environmental Assessment Techniques, Part 1: Air Quality, Annex D2: Road Type. Available at: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section3/ha20707.pdf [Date Accessed: 08/10/19]

SA Objective	Assumptions
	Development proposals located within 200m of a main road would be expected to have a minor negative impact on site end users' exposure to air pollution. Development proposals located over 200m from a main road would be expected to have a minor positive impact on site end users' exposure to air pollution. Air Quality Management Areas (AQMAs) are considered to be an area where the national air quality objective will not be met. Development proposals which would locate site end users within 200m of an AQMA would be expected to have a moderate negative impact on human health. Development proposals which would locate site end users over 200m from an AQMA would be expected to have a minor positive impact on human health.
10 – Community and Wellbeing	In accordance with Barton *et al.*'s sustainable distances[51], development that is located within 600m of a local service, such as a post office or a local shop, would be expected to be able to provide site end users with access to essential services. Development proposals located within this target distance are assumed to have a minor positive impact on local accessibility.
11- Transport and Accessibility	**Public Transport:** In line with Barton *et al.*'s sustainable distances[52], site end users should be situated within 2km of a railway station and 400m of a bus stop offering a frequent service. Bus service frequency and destination information was obtained from Google Maps[53,54]. In order for a positive impact to be anticipated with regard to access to public transport, consideration has been given to the proportion of a development proposal within the target distance of these key transport services. To be sustainable, the bus stop should provide users with hourly services. Where a physical barrier prevents access to one of these services, this has been noted within the assessment text. Development proposals located within the target distance to a railway station or bus stop would be expected to have a minor positive impact on local transport and accessibility. Development proposals located outside of the target distance

[51] Barton, H., Grant. M. & Guise. R. (2010) Shaping Neighbourhoods: For local health and global sustainability, January 2010

[52] Barton, H., Grant. M. & Guise. R. (2010) Shaping Neighbourhoods: For local health and global sustainability, January 2010.

[53] Google Maps (no date) Available at: https://www.google.co.uk/maps [Date Accessed: 08/10/19]

[54] Live departure boards available from Google Maps have been used to assess the frequency of services at bus stops within the Plan area. These are obtained from local bus timetables.

SA Objective	Assumptions
	to a railway station or a bus stop would be expected to have a minor negative impact on transport and accessibility. **Pedestrian Access:** Development proposals have been assessed in terms of their access to the surrounding footpath network. In order for a positive impact to be anticipated with regard to pedestrian access, consideration has been given to the provision of safe access to and from the development proposal, e.g. footpath or PRoW. Safe access is determined to be that which is suitable for wheelchair users and pushchairs. Development proposals which would be expected to provide site end users with adequate access to the surrounding footpath network would be expected to have a minor positive impact on pedestrian access. Development proposals which would not be anticipated to provide adequate access would be expected to result in a minor negative impact on pedestrian access. **Road Access:** Development proposals have been assessed in terms of their access to the surrounding road network. Development proposals which would be likely to provide site end users with adequate access to the surrounding road network would be expected to have a minor positive impact on road access. Development proposals which would not be anticipated to provide adequate access would be expected to have a minor negative impact on road access.
12 - Education	It is assumed that new residents in the Plan area require access to primary and secondary schools to help facilitate good levels of education, skills and qualifications of residents. In line with Barton *et al.*'s sustainable distances[55], for the purpose of this assessment, 800m is assumed to be the target distance for travelling to a primary school and 1.5km to secondary schools. All schools identified are publicly accessible state schools. It is recognised that not all schools within RBWM are accessible to all pupils. For instance, independent and academically selective schools may not be accessible to all. Local primary schools may only be Infant or Junior schools and therefore, would not provide education for all children of primary school age. Some secondary schools may only be for girls or boys and therefore would not provide education for all. This has been considered within the assessment.

[55] Barton, H., Grant. M. & Guise. R. (2010) Shaping Neighbourhoods: For local health and global sustainability, January 2010.

SA Objective	Assumptions
	At this stage, there is not sufficient information available to be able to accurately predict the impacts of new development on the capacity of local schools, or to incorporate local education attainment rates into the assessment. Development proposals which would locate site end users within the target distances of a primary school or secondary school would be expected to have a minor positive impact for this objective. Development proposals which would locate site end users outside of the target distances of a primary or secondary school would be expected to have a minor negative impact for this objective. Development proposals which would locate new residents within the target distance to both a primary and secondary school would be expected to have a major positive impact on the education objective. Development proposals which would locate new residents outside of the target distance to both a primary and secondary school would be likely to have a major negative impact on the education objective. Development proposals for employment or non-residential use have not been assessed for their proximity to educational establishments. Sites proposed for non-residential uses would have a negligible impact for this objective.
13 – Waste	For the purpose of this assessment, it is assumed that new residents in RBWM will have an annual waste production of 409.5kg per person, in line with the England average[56]. Between 2017 and 2018, the total household waste collected by RBWM Council was 67,765 tonnes[57]. A minor negative impact would be expected for development proposals which would be likely to increase household waste generation by between 0.1% and 0.99% in comparison to 2017 - 2018 levels. A major negative impact would be expected for development proposals which would be likely to increase household waste generation by 1% or more in comparison to 2017 - 2018 levels. As waste generation has been calculated per person per household, development proposed for employment or non-residential end use have not been included in this assessment.

[56] Department for Environment and Rural Affairs (2018) Local authority collected waste generation from April 2000 to March 2018 (England and regions) and local authority data April 2017 to March 2018. Available at: https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables [Date Accessed: 08/10/19]

[57] Ibid

SA Objective	Assumptions
14 - Employment	**Employment Opportunities:** It is assumed that, in line with Barton *et al.*'s sustainable distances[58], new residents should be situated within 5km of key employment areas to ensure they have access to a range of employment opportunities capable of meeting their needs. Key employment areas are defined as locations which would provide a range of employment opportunities from a variety of employment sectors, including retail parks, industrial estates and major local employers. Development proposals which would locate new residents within the target distance of a key employment area would be expected to have a minor positive impact for this objective. Development proposals which would locate new residents outside the target distance to a key employment area would be expected to have a minor negative impact for this objective. **Employment Floorspace:** An assessment of current land use at all development proposals has been made through reference to aerial mapping and the use of Google Maps[59]. Development proposals which would result in a net increase in employment floorspace would be expected to have a major positive impact on the local economy. Development proposals which would result in a net decrease in employment floorspace would be expected to have a major negative impact on the local economy. Development proposals for employment floorspace that currently comprise employment floorspace would be likely to have an overall negligible impact on the economy objective.

[58] Barton, H., Grant. M. & Guise. R. (2010) Shaping Neighbourhoods: For local health and global sustainability, January 2010

[59] Google Maps (no date) Available at: https://www.google.co.uk/maps [Date Accessed: 08/10/19]

5 Reasonable Alternatives

5.1 Reasonable Alternatives

5.1.1 Article 5(1) of the SEA Directive states that:

"Where an environmental assessment is required under Article 3(1), an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated. The information to be given for this purpose is referred to in Annex I".

5.1.2 Planning Practice Guidance[60] states that:

"Reasonable alternatives are the different realistic options considered by the plan-maker in developing the policies in its plan. They must be sufficiently distinct to highlight the different sustainability implications of each so that meaningful comparisons can be made".

5.1.3 It is therefore necessary for the SA to show that the Council has considered reasonable alternatives for proposals in the BLPSV-PC. The following sections of this report demonstrate when and where the Council considered reasonable alternatives in the plan making process and how the SA influenced the plan-making.

5.2 Reasonable alternatives: housing numbers and employment floorspace

5.2.1 At the Regulation 18 stage, the Council considered four housing options as part of the strategic scenarios. The four options were for 8,586 dwellings, 9,361 dwellings, 11,898 dwellings or 14,298 dwellings.

[60] MHCLG (2019) Planning Practice Guidance: Strategic environmental assessment and sustainability appraisal. Available at: https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal [Date Accessed: 08/10/19]

5.2.2 In response to comments raised during the Regulation 19 consultation, RBWM identified three additional housing number options which were identified consider meeting the unmet housing need of Slough Borough. These were presented and assessed in the SA Addendum. These three options were for: a revised OAN of 778dpa (approximately 15,560 dwellings); the original OAN plus the lower end of Slough's expected unmet housing need of 6,000 homes (approximately 20,000 dwellings); and the original OAN plus the higher end of Slough's expected unmet housing need of 11,000 homes (approximately 25,000 dwellings).

5.2.3 Housing options 1 and 2 were identified as having a likely major negative impact on housing provision, as the options would be unlikely to satisfy the identified housing need. Options 4, 5 6 and 7 were identified as resulting in a major positive impact in regard to housing and employment provision. Uncertain impacts in regard to water and flooding, cultural heritage, health and education were identified for Options 5, 6 and 7. All options would be likely to have negative impacts on air and noise pollution.

5.2.4 The SA concluded that option 4 (for 14,298 dwellings) was the best performing option for housing growth, as this option meets the housing requirements of the borough. The BLPSV-PC allocates sites for 14,240 dwellings.

5.3 Reasonable alternatives: spatial strategy

5.3.1 As part of the Regulation 18 consultation, the Council considered four strategic scenarios:

- **Option 1** – Urban sites delivering 8,586 homes;
- **Option 2** – Urban sites and brownfield sites delivering 9,361 homes;
- **Option 3** – Urban sites and brownfield sites, and low-level Green Belt release, delivering 11,898 homes; and
- **Option 4** - Urban sites and brownfield sites, and moderate Green Belt release, delivering 14,298 homes.

5.3.2 In response to comments raised during the Regulation 19 consultation, RBWM has identified twelve additional spatial distribution options:

- **Option 5A** – strong intensification of urban areas of Maidenhead, Windsor and Ascot;
- **Option 5B** – new garden village/ settlement of around 1,320 units;

- **Option 5C** – intensification of sites proposed for release from Green Belt on the edge of existing excluded settlements;
- **Option 5D** – release of additional Green Belt sites on edge of existing excluded settlements, predominantly around Maidenhead;
- **Option 6A** – new garden village/ settlement of around 6,000 units;
- **Option 6B** – intensification across all sites plus new garden village/ settlement of 1,500-2,000 units;
- **Option 6C** – intensification across all sites, including around railway stations plus new garden village/settlement of 4,000- 5,000 units;
- **Option 6D** – release of a larger number of employment sites plus new garden village/ settlement of 4,000-5,000 units;
- **Option 6E** – intensification across all sites plus release of additional Green Belt sites on edge of existing excluded settlements;
- **Option 7A** – new garden village/ settlement of around 11,000 units;
- **Option 7B** – intensification across all sites plus release of additional Green Belt sites on edge of existing excluded settlements plus new garden village/settlement of 2,000- 4,000 units; and
- **Option 7C** - intensification across all sites plus new garden village/settlement of around 8,000 units.

5.3.3 The majority of the spatial options were identified as performing poorly against the SA Objectives on climate change, air and noise pollution, biodiversity, landscape, use of resources and waste. All spatial options apart from Options 1 and 2, would be expected to have a positive impact on housing provision across the borough. All options apart from option 6D would be expected to have positive impacts on economy and employment. Mixed, and sometimes uncertain, sustainability impacts were identified for water and flooding, health, community, transport and education.

5.3.4 Following the assessment of these 16 spatial options, the SA concluded that option 4 (focusing development towards urban sites and brownfield sites, and moderate Green Belt release) was the best performing option. The Council has taken this approach for the spatial strategy of the BLPSV-PC. The majority of development is focussed towards three strategic growth areas; Maidenhead, Windsor and Ascot, and development proposals shall be focused on urban and brownfield sites where possible, with some release of Green Belt where appropriate.

5.4 Reasonable alternatives: policy assessments

5.4.1 The first assessment of policies took place in 2016 as part of the Regulation 18 consultation. The Regulation 18 SA report appraised 57 draft policies. Reflecting on comments received during this consultation period, the Council produced 46 final policies which were assessed in the Regulation 19 SA Report in 2017. One policy on affordable housing was assessed within the SA Addendum in 2018.

5.4.2 In response to the Regulation 19 consultation and issues raised during the examination hearings, the Council have further revised existing policies and created new policies. The final 48 policies have been appraised within this SA of the BLPSV-PC (see **Appendix B**).

5.4.3 The SA findings have influenced the plan-making at each stage of policy writing. Recommendations on how to improve the sustainability performance of each policy has been supplied to the Council at each stage of the SA process. This has enabled the Council to choose the most sustainable and effective policy option within the BLPSV-PC.

5.5 Reasonable alternatives: site assessments

5.5.1 Numerous reasonable alternative sites have been considered by the Council throughout the Plan-making process. As the preparation of a Local Plan is an iterative process, the Council has undertaken several 'Call for Sites' as part of the process of updating the HELAA. As a result, sites are added and removed from the site selection process regularly. As a result of this, further site assessment work has been undertaken at intervals throughout the process which aim to consider new sites and discount sites that are no longer considered in the process.

5.5.2 In the 2016 Regulation 18 SA Report, approximately 120 reasonable alternative sites and five strategic locations were assessed. Of these sites, 97 were selected for inclusion within the BLPSV and were assessed within the 2017 Regulation 19 SA report. A total of 15 additional sites were assessed as part of the SA Addendum in 2018.

5.5.3 To inform this report, the Council has identified 54 reasonable alternative development sites. The assessment findings are presented in **Appendix D**.

5.6 Selection and rejection of reasonable alternatives

5.6.1 To inform a process of identifying, describing and evaluating reasonable alternatives, the Council has followed its own methodology for identifying reasonable alternative development sites from the 2019 HELAA[61]. This methodology identified 54 reasonable alternative development sites to be assessed within the latest stage of the SA process. These sites have been assessed for their sustainability performance. The assessment findings are presented in **Appendix D**. Following this, the Council selected 40 sites as the preferred approach to development within the borough. These 40 sites have been assessed in **Appendix C**. Development sites for employment and housing land were considered by the Council.

5.6.2 The Council has allocated three green infrastructure sites in the BLPSV-PC. An exercise in considering reasonable alternatives for green infrastructure locations was explored. It was concluded that all of the sites that might form reasonable alternatives were already greenfield sites and not potential development locations. Many of the potential reasonable alternative green infrastructure sites were already performing green infrastructure functions and having some form of protection or designation.

5.6.3 The sustainability performance of each reasonable alternative development site (see **Appendix D**) has been considered in the Council's selection of sites. Besides scoring and proving an assessment narrative on sustainability performance of each reasonable alternative, recommendations on mitigation measures to help overcome some of the identified negative effects were suggested to the Council[62] in order to assist with decision making. Mitigation recommendations have also been used by the Council when preparing the site proformas which accompanied the preferred sites.

[61] Royal Borough of Windsor and Maidenhead Housing and Economic Land Availability Assessment 2019 (September 2019)

[62] Internal Advice Note on recommended mitigation measures prepared by Lepus for the Council (26th September 2019).

Selected Housing Allocations

5.6.4 The Council has selected the following development proposals from the assessment of reasonable alternatives. **Table 5.1** below lists the 40 allocated sites and provides an explanation for the selection of the sites. **Table 5.2** provides an outline explanation as to why reasonable alternative sites were rejected. This justification was provided by the Council.

Table 5.1: *Reasons for selecting the 40 allocated sites*

Allocation Ref	Site Name	Reasons for selection (provided by RBWM Council)
AL1	Nicholsons Centre	High priority location free of flooding and Green Belt constraints. Parameters for development and design not yet set through the development management process. Large site that should make a significant contribution to regeneration of Maidenhead. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable comprehensive development and effective placemaking in Maidenhead.
AL2	Land between High Street and West Street, Maidenhead	Town centre PDL site in high priority growth location free of flooding and Green Belt constraints. Needs to be considered as part of a wider Maidenhead Town Centre area to enable comprehensive development and effective placemaking.
AL3	St Mary's Walk, Maidenhead	Town centre PDL site in high priority growth location free of flooding and Green Belt constraints. No planning permission in place so parameters for development and design not yet set through the development management process. Key connectivity site that should make a significant contribution to regeneration of Maidenhead. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable comprehensive development and effective placemaking in Maidenhead.
AL4	York Road, Maidenhead	High priority location free of flooding and Green Belt constraints. Planning permissions and design are not advanced far enough to negate effectiveness of allocation. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable comprehensive development and effective placemaking.
AL5	West Street Opportunity Area, Maidenhead	Town centre PDL site in high priority growth location free of flooding and Green Belt constraints. No planning permission in place so parameters for development and design not yet set through the development management process. Prominent site that should make a significant contribution to regeneration of Maidenhead. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable comprehensive development and effective placemaking in Ascot.
AL6	Methodist Church, High Street, Maidenhead	Town centre PDL site in high priority growth location free of flooding and Green Belt constraints. No planning permission in place so parameters for development and design not yet set through the development management process. Prominent site that should make a significant contribution to regeneration of Maidenhead. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable

Allocation Ref	Site Name	Reasons for selection (provided by RBWM Council)
		comprehensive development and effective placemaking in Maidenhead. The community facilities will either need to be retained or a site in the Town Centre for alternative facilities will need to be found.
AL7	Maidenhead Railway Station	Town centre PDL site in high priority growth location free of flooding and Green Belt constraints. No planning permission in place so parameters for development and design not yet set through the development management process. Key gateway site that should make a significant contribution to regeneration of Maidenhead. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable comprehensive development and effective placemaking in Maidenhead.
AL8	Employment Allocation - St Cloud Gate, Maidenhead	Town Centre PDL site in high priority growth location free of flooding and Green Belt constraints. Currently in employment use. This has been a site identified in our Employment topic paper as a potential site to deliver additional employment floorspace.
AL9	St Cloud Way, Maidenhead	Town centre brownfield site in high priority growth location free of Green Belt constraints and largely flood risk free. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered in conjunction with adjoining St Cloud's Way site and as part of a wider area to enable comprehensive development and effective placemaking in Maidenhead Town Centre.
AL10	Maidenhead Retail Park, Stafferton Way, Maidenhead, SL6 1AA	Town centre PDL site in high priority growth location. Free of flooding and Green Belt constraints. No planning permission in place so parameters for development and design not yet set through the development management process. Large prominent site that should make a significant contribution to regeneration of Maidenhead. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable comprehensive development and effective placemaking in Maidenhead.
AL11	Employment Allocation - Crossrail West Outer Depot, Maidenhead	Town Centre PDL site in priority growth location. Free of flooding. Currently in employment use. The site is next to the rail station and line and more suited to employment uses to help meet the identified need for more employment floorspace.
AL12	Land to east of Braywick Gate, Braywick Road, Maidenhead	Town centre PDL site in high priority growth location free of flooding and Green Belt constraints. No planning permission in place so parameters for development and design not yet set through the development management process. Prominent site that should make a significant contribution to regeneration of Maidenhead. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable comprehensive development and effective placemaking in Maidenhead.
AL13	Desborough, Harvest Hill Road, South West Maidenhead	Very large Green Belt site almost completely free of flooding constraints in South West Maidenhead strategic location. Makes low to moderate contribution to Green Belt purposes. No planning permission in place so parameters for development and design not yet set. Allocation required to ensure delivery of specific objectives for site and that a comprehensive and placemaking approach is taken that takes account of wider South West Maidenhead area.
AL14	Employment Allocation -	The Triangle Site (land south of the A308(M) west of Ascot Road and north of the M4), Maidenhead. This was initially identified as a

Allocation Ref	Site Name	Reasons for selection (provided by RBWM Council)
	The Triangle Site (land south of the A308(M) west of Ascot Road and north of the M4), Maidenhead	safeguarded employment site and has been suggested in the Employment topic paper as a site to deliver additional employment floorspace, which is needed in the current plan period. Not suitable for housing as 35% of the site is in Flood Zone 2 and 40% in Flood Zone 3. Site is in Green Belt and only makes a moderate contribution to Green Belt purposes.
AL15	Green Infrastructure Allocation - Braywick Park, Maidenhead	This site is allocated as a strategic site in the Green Belt. The new leisure centre replacing the Magnet leisure centre is currently in development in the west of the site. The site is allocated to be a multifunctional space providing a sports hub, public park, a school and enhancement of the local nature reserve and SSSI.
AL16	Ascot Centre, Ascot	High priority location free of flooding. Part of site in Green Belt but passed Edge of Settlement Study. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable comprehensive development and effective placemaking in Ascot.
AL17	Shorts Waste Transfer Station and Recycling Facility, St Georges Lane, Ascot	High priority location free of flooding constraints adjacent to Ascot station. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable comprehensive development and effective placemaking in Ascot. In Green Belt but passed Edge of Settlement Study (EoSS).
AL18	Ascot Station Car Park, Ascot	Priority location free of flooding constraints and part of Ascot placemaking area. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable effective placemaking in Ascot.
AL19	Englemere Lodge London Road Ascot	Small Green Belt site on edge of Ascot free of flooding constraints. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure Green Belt release and delivery of specific objectives for site.
AL20	Heatherwood Hospital, Ascot	PDL Green Belt location free of flooding constraints. Planning permissions and design are not advanced far enough to negate effectiveness of allocation. Allocation required to ensure delivery of specific objectives for site.
AL21	Land west of Windsor, north and south of A308, Windsor	Large Green Belt site that makes only a moderate contribution to Green Belt purposes, largely free of flooding constraints (97% in Flood Zone 1), in Windsor growth location. No planning permission in place so parameters for development and design not yet set. Allocation required to ensure delivery of specific objectives for site and that a comprehensive and placemaking approach is taken that takes account of wider Windsor growth area.
AL22	Squires Garden Centre Maidenhead	Growth location on edge of Windsor. When assessed in the EoSS, it was part of a large site that made a moderate contribution to Green Belt purposes. Largely free of flooding constraints (92% in Flood Zone 1). Planning permissions and design are not advanced far enough to negate effectiveness of allocation. Allocation required to

Allocation Ref	Site Name	Reasons for selection (provided by RBWM Council)
	Road Windsor	ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable comprehensive development and effective placemaking for Windsor growth location.
AL23	St. Marks Hospital, Maidenhead	Small urban site based to the west outside of Maidenhead Town Centre. No planning permission in place. None of the site is located within the Green Belt. The site is also wholly within Flood Zone 1. The site would involve the relocation of existing community facilities before the current ones are redeveloped. There are no further absolute or essential constraints on the site.
AL24	Land east of Woodlands Park Avenue and north of Woodlands Business Park, Maidenhead (West)	Large Green Belt site free of flooding constraints on edge of Maidenhead offering low/moderate contribution to Green Belt purposes. Site a mix of Grades 2 and 3 agricultural land quality. No planning permission in place so parameters for development and design not yet set. Allocation required to ensure delivery of specific objectives for site and to ensure that a comprehensive and placemaking approach is taken.
AL25	Spencer's Farm, Maidenhead	Large Green Belt site on edge of Maidenhead and only makes a moderate contribution to Green Belt purposes. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure delivery of specific objectives for site. Largely free of flooding (84% in Flood Zone 1).
AL26	Land between Windsor Road and Bray Lake, south of Maidenhead	Small Green Belt site and makes low to moderate contribution to Green Belt purposes. Largely free of flood risk (79% in Flood Zone 1). No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure Green Belt release and delivery of specific objectives for site.
AL27	Green Infrastructure Allocation - Land south of Ray Mill Road East, Maidenhead	This site provides important visual amenity to the surrounding residential area and should be retained as a local green space (pocket park). The site was previously allocated for housing, but it has severe flood risk (parts in Flood Zone 3), and therefore the site is an important flood alleviation site. Due to proximity to river corridor and nearby lake the site is of high value to various wildlife including: birds, bats, frogs and hedgehogs.
AL28	Green Infrastructure Allocation - Land north of Lutman Lane, Spencer's Farm, Maidenhead	This area is connected to the green way, and the strand water (a Local Wildlife Site), towards the east. The site thrives in an existing network of green infrastructure which should be preserved and has potential to be enhanced. The site is also a flood risk area (Flood Zone 3) and so it is an important flood alleviation buffer to the proposed development in the west. There is an important habitat woodland area in the north and a sporting facility in the south east that should be retained. Originally this allocation was part of the housing allocation site (it would not have had housing on it) but added to the complexity of a mainly housing site. It was felt more appropriate to allocate this site as part of the GI network separately. Although this is the use the land was intended for.
AL29	Minton Place, Victoria St, Windsor	Brownfield town centre site free of flooding and Green Belt constraints. Large mixed-use site in Windsor town centre. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure delivery of specific objectives for site and to ensure it is considered as part of a wider area to enable effective placemaking in Windsor.

Allocation Ref	Site Name	Reasons for selection (provided by RBWM Council)
AL30	Windsor and Eton Riverside Station Car Park	Town centre location free of Green Belt constraints. Largely free of flood risk (72% in Flood Zone 1). No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure delivery of specific objectives for site and constraints are adequately dealt with.
AL31	King Edward VII Hospital, Windsor	Small urban site based to the eastern side of Windsor Town. No planning permission in place and no design seen through the development management process. None of site is located within the Green Belt. The site is also wholly within Flood Zone 1. The site would involve the relocation of existing community facilities before the current ones are redeveloped. There are no further absolute or essential constraints on the site.
AL32	Sandridge House, London Road, Ascot	Site is a small urban fringe site to the southern edge of north Ascot, opposite Englemere Lodge and Heatherwood Hospital. The site has an application currently pending consideration but has not yet been permitted. None of the site is located within the Green Belt. The site is also wholly within Flood Zone 1. There are no further absolute or essential constraints on the site.
AL33	Sunningdale Broomhall Centre	Small part urban/part Green Belt site free of flood risk. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure Green Belt release and delivery of specific objectives for site.
AL34	White House, London Road, Sunningdale	Settlement location free of flooding and Green Belt constraints. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure delivery of specific objectives for site and supply of small sites for SME.
AL35	Sunningdale Park, Sunningdale	Large Green Belt site free of flooding constraints. No planning permission in place so parameters for development and design not yet set. Allocation required to ensure delivery of specific objectives for site and to ensure that a comprehensive and placemaking approach is taken that incorporates the adjoining proposed green infrastructure site.
AL36	Gasholder Station Whyteladyes Lane, Cookham	Settlement location free of flooding and Green Belt constraints. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure delivery of specific objectives for site.
AL37	Land north of Lower Mount Farm Long Lane Cookham	Large Green Belt site free of flooding constraints on edge of Cookham offering moderate contribution to Green Belt purposes. Site of a mix of Grades 2 and 3 agricultural land quality. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure delivery of specific objectives for site.
AL38	Land East of Strande Park, Strande Lane, Cookham, Maidenhead	Small Green Belt site on edge of Cookham offering low contribution to Green Belt purposes. almost all of the site is in Flood Zone 1. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure Green Belt release and delivery of specific objectives for site.
AL39	Land at Riding Court Road and	Small Green Belt site almost wholly in Flood Zone 2 on edge of Datchet offering moderate contribution to Green Belt purposes. Much of site is Grade 1 agricultural land. However, all of site is in Flood Zones 1 and 2 and site is currently being used as a construction

Allocation Ref	Site Name	Reasons for selection (provided by RBWM Council)
	London Road Datchet	site for smart motorway programme with significant areas of land clearance to allow for portacabin foundations and access routes. Land considered to be urbanised and agricultural land value likely to have been significantly diminished. No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure Green Belt release and delivery of specific objectives for site.
AL40	Land to East of Queen Mother Reservoir	Small Green Belt site making a lower contribution to Green Belt purposes. . The majority of site is in Flood Zone 1 (66%). No planning permission in place so parameters for development and design not yet set through the development management process. Allocation required to ensure Green Belt release, delivery of specific objectives for site and supply of sites suitable for delivery by Small or Medium Enterprises.

Table 5.2: *Outline of reasons for rejecting reasonable alternative sites*

HELAA Ref	Site Name	Reasons for rejection (provided by RBWM Council)
0031a	Land Rear of 99 To 119 Whyteladyes Lane Cookham Maidenhead (Land West of Whyteladyes Lane)	Green Belt location rejected by EoSS. Greenfield site.
0095	Summerleaze Lake, Summerleaze Road, Maidenhead	None of the site is in Flood Zone 1 and 100% of site is in Flood Zone 3a. No justification given for floating residential development on the site.
0112	Maidenhead Lawn Tennis Club, All Saints Avenue, Maidenhead	Would result in loss of sporting facilities/community space
0115	School on College Avenue, Maidenhead	Would result in loss of community/education facilities.
0127	Land at Oakfield Farm, Ascot	Isolated Green Belt location. Not included in EoSS. Development would be contrary to spatial strategy. Also constrained by ancient woodland. Eastern parts of the site are located within the Wells LWS and the Windsor Great Park and Woodlands biodiversity opportunity area.
01299b	St Edmunds House, Ray Mill Road West, Maidenhead, SL6 8SB	Site too small for allocation and partly affected by 10m (Area Tree Preservation Order) buffer.
0132a	Land at Ascentia House, Lyndhurst Road, Ascot, SL5 9ED	Existing employment site that needs to be retained in employment use.
0146a	The Frith, Brockenhurst Road, South Ascot, SL5 9HA	Site too small for allocation
0222	Sawyers Close, Windsor	Promoted for housing but none of site is in Flood Zone 1, 11.9% in Flood Zone 3a.
0250a	Land at Water Oakley Farm	PDL in Green Belt where intensification of development proposed. Isolated part greenfield, part previously developed site in Green Belt.
0260	Land North and East of Tithe Barn Drive (Land Rear of 55 To	Too small for allocation. Developable area too restricted by constraints such as flooding and TPO.

HELAA Ref	Site Name	Reasons for rejection (provided by RBWM Council)
	65 Windsor Road Maidenhead SL6 2DN)	
0297	Moorbridge Court, 29-41 Moorbridge Road, Maidenhead	Loos of employment site. Site has prior approval granted for office to residential conversion.
0298	Liberty House, 43-53 Moorbridge Road, Maidenhead	Loss of employment site. Site has prior approval granted for office to residential conversion.
030a	The Old Orchard, Dedworth Road, Windsor	Greenfield Green Belt with majority in priority habitats.
0320	Philo Field, Cookham	Isolated greenfield Green Belt location not included in EoSS. Development would be contrary to spatial strategy.
0356	32 Peascod Street Windsor SL4 1EA	Existing employment site that needs to be retained in employment use.

6 The Preferred Approach

6.1 Policies

6.1.1 Following comments received during the Regulation 19 consultations and issues raised during the examination hearings, the Council has revisited the policies of the Local Plan. The final policies within the BLPSV-PC are listed in **Table 6.1** below.

Table 6.1: *Policies within the BLPSV-PC*

Policy ref.	Policy Name
Strategic	
SP1	Spatial Strategy for the Royal Borough of Windsor and Maidenhead
SP2	Climate Change
Quality of Place	
QP1	Sustainability and Placemaking
QP1a	Maidenhead Town Centre Strategic Placemaking Area
QP1b	South West Maidenhead Strategic Placemaking Area
QP1c	Ascot Centre Strategic Placemaking Area
QP2	Green and Blue Infrastructure
QP3	Character and Design of new Development
QP3a	Building Height and Tall Buildings
QP4	River Thames Corridor
QP5	Rural Development
Housing	
HO1	Housing Development Sites
HO2	Housing Mix and Type
HO3	Affordable Housing
HO4	Gypsies and Travellers
HO5	Loss and Subdivision of Dwellings
Economy	
ED1	Economic Development
ED2	Protected Employment Sites
ED3	Other Sites and Loss of Employment Floorspace
ED4	Farm Diversification
Town Centres and Retail	
TR1	Hierarchy of Centres
TR2	Windsor Town Centre
TR3	Maidenhead Retail Centre
TR4	District Centres
TR5	Local Centres
TR6	Strengthening the Role of Centres

Policy ref.	Policy Name
TR7	Shops and Parades Outside Defined Centres
TR8	Markets
Visitor and Tourism	
VT1	Visitor Development
Historic Environment	
HE1	Historic Environment
HE2	Windsor Castle and Great Park
Natural Resources	
NR1	Managing Flood Risk and Waterways
NR2	Nature Conservation & Biodiversity
NR3	Trees, Woodlands and Hedgerows
NR4	Thames Basin Heaths Special Protection Area
NR5	Renewable Energy
Environmental Protection	
EP1	Environmental Protection
EP2	Air Pollution
EP3	Artificial Light Pollution
EP4	Noise
EP5	Contaminated Land and Water
Infrastructure	
IF1	Infrastructure and Developer Contributions
IF2	Sustainable Transport
IF3	Local Green Space
IF4	Open Space
IF5	Rights of Way and Access to the Countryside
IF6	Community Facilities
IF7	Utilities

6.1.2 These policies have been assessed in **Appendix B**. **Table 6.2** below provides a summary of the sustainability performance of the 48 policies. This table should be read in conjunction with the text narrative provided in **Appendix B**. This table is intended as an overview of the assessments in order to provide a useful indicator of sustainability performance associated with each policy.

Table 6.2: *Sustainability impact matrix of the 48 policies of the BLPSV-PC*

Policy Reference	1 Climate change	2 Water and flooding	3 Air and noise Pollution	4 Biodiversity	5 Landscape quality	6 Cultural Heritage	7 Use of resources	8 Housing	9 Health	10 Community	11 Transport	12 Education	13 Waste	14 Economy and employment
Spatial Portrait														
Policy SP1	+	0	+	0	+	+	+	++	+	+	+	+	0	++
Policy SP2	+	+	+	+	+	0	0	0	+	+	0	0	0	0
Quality of Place														
Policy QP1	+	+	+	+	+	+	0	0	+	++	+	0	0	0
Policy QP1a	-	-	-	0	+	+	+	++	0	++	++	+	-	++
Policy QP1b	-	-	-	+	-	-	-	++	0	++	++	+	-	++
Policy QP1c	-	0	-	+	+	+	+	++	-	+	++	+	-	++
Policy QP2	+	+	+	+	+	0	0	0	+	0	0	0	0	0
Policy QP3	+	0	+	+	+	+	0	0	+	+	+	0	+	0
Policy QP3a	+	+	+	+	0	0	0	0	0	0	0	0	0	0
Policy QP4	+	+	0	+	+	+	0	0	+	0	+	0	0	+
Policy QP5	0	0	0	0	+	0	+	0	0	0	0	0	0	0
Housing														
Policy HO1	--	-	--	-	-	-	-	++	-	+	+	+	--	+
Policy HO2	0	0	0	0	0	0	0	+	+	+	0	0	0	0
Policy HO3	0	0	0	0	0	0	0	+	0	+	0	0	0	0
Policy HO4	+	+	+	0	0	0	0	+	+	+	+	+	0	+
Policy HO5	0	0	0	0	0	0	+	+	+	+	+	0	+	0
Economy														
Policy ED1	0	0	0	0	+	0	+	0	0	0	0	0	0	++
Policy ED2	0	0	0	0	0	0	+	0	0	0	0	0	0	++
Policy ED3	0	0	0	0	0	0	0	0	0	0	0	0	0	+
Policy ED4	0	0	0	0	0	0	+	0	0	+	+	0	0	+
Town Centres and Retail														
Policy TR1	0	0	0	0	+	0	+	0	0	+	0	0	0	+

Policy TR2	0	0	0	0	+	+	+	+	0	+	0	0	0	+
Policy TR3	0	0	0	0	0	0	+	0	0	+	0	0	0	+
Policy TR4	0	0	0	0	0	0	+	+	0	+	0	0	0	+
Policy TR5	0	0	0	0	0	0	0	+	0	+	0	0	0	+
Policy TR6	0	0	0	0	0	0	+	0	0	+	0	0	0	+
Policy TR7	0	0	0	0	0	0	0	0	0	+	0	0	0	+
Policy TR8	0	0	0	0	0	0	0	0	0	+	0	0	0	+
Visitors and Tourism														
Policy VT1	+	0	+	+	+	+	+	0	+	+	+	0	0	+
Historic Environment														
Policy HE1	0	0	0	0	+	++	0	0	0	0	0	0	0	0
Policy HE2	0	0	0	0	+	+	0	0	0	+	0	0	0	+
Natural Environment														
Policy NR1	+	+	0	+	+	0	0	0	0	0	0	0	0	0
Policy NR2	+	+	+	++	+	0	+	0	+	+	0	0	0	0
Policy NR3	+	+	+	+	+	0	+	0	+	0	0	0	0	0
Policy NR4	0	0	0	+	0	0	0	0	+	+	0	0	0	0
Policy NR5	+	0	0	0	0	0	+	0	0	0	0	0	0	0
Environmental Protection														
Policy EP1	0	+	+	+	+	0	0	0	+	0	0	0	0	0
Policy EP2	+	0	0	0	0	0	0	0	0	0	+	0	0	0
Policy EP3	0	0	0	+	+	0	0	0	+	0	0	0	0	0
Policy EP4	0	0	+	0	0	0	0	0	+	0	0	0	0	0
Policy EP5	0	+	0	0	0	0	0	0	+	0	0	0	0	0
Infrastructure														
Policy IF1	0	0	0	0	0	0	0	0	+	+	+	+	0	0
Policy IF2	+	+	+	+	0	0	0	0	+	+	++	+	0	+
Policy IF3	0	0	0	0	0	0	0	0	+	+	0	0	0	0
Policy IF4	+	+	+	+	+	0	0	0	+	+	0	0	0	0
Policy IF5	+	0	+	0	+	0	0	0	+	+	+	+	0	0
Policy IF6	0	0	0	0	0	0	0	0	+	+	+	+	0	0
Policy IF7	0	+	0	0	0	0	0	0	0	+	0	0	0	+

6.2 Site Allocations

6.2.1 Following the assessment of reasonable alternative development sites (see **Appendix D**), the Council has allocated 40 sites for development. **Table 6.3** below lists the 40 site allocations within the BLPSV-PC.

Table 6.3: *Site allocations within the BLPSV-PC*

Allocation Ref	Site Name
AL1	Nicholsons Centre
AL2	Land between High Street and West Street, Maidenhead
AL3	St Mary's Walk, Maidenhead
AL4	York Road, Maidenhead
AL5	West Street Opportunity Area, Maidenhead
AL6	Methodist Church, High Street, Maidenhead
AL7	Maidenhead Railway Station
AL8	Employment Allocation - St Cloud Gate, Maidenhead
AL9	St Cloud Way, Maidenhead
AL10	Maidenhead Retail Park, Stafferton Way, Maidenhead, SL6 1AA
AL11	Employment Allocation - Crossrail West Outer Depot, Maidenhead - St Cloud Gate, Maidenhead
AL12	Land to east of Braywick Gate, Braywick Road, Maidenhead
AL13	Desborough, Harvest Hill Road, South West Maidenhead
AL14	Employment Allocation - The Triangle Site (land south of the A308(M) west of Ascot Road and north of the M4), Maidenhead
AL15	Green Infrastructure Allocation - Braywick Park, Maidenhead
AL16	Ascot Centre, Ascot
AL17	Shorts Waste Transfer Station and Recycling Facility, St Georges Lane, Ascot
AL18	Ascot Station Car Park, Ascot
AL19	Englemere Lodge London Road Ascot
AL20	Heatherwood Hospital, Ascot
AL21	Land west of Windsor, north and south of A308, Windsor
AL22	Squires Garden Centre Maidenhead Road Windsor
AL23	St. Marks Hospital, Maidenhead
AL24	Land east of Woodlands Park Avenue and north of Woodlands Business Park, Maidenhead (West)
AL25	Spencer's Farm, Maidenhead
AL26	Land between Windsor Road and Bray Lake, south of Maidenhead
AL27	Green Infrastructure Allocation - Land south of Ray Mill Road East, Maidenhead
AL28	Green Infrastructure Allocation - Land north of Lutman Lane, Spencer's Farm, Maidenhead
AL29	Minton Place, Victoria St, Windsor

Allocation Ref	Site Name
AL30	Windsor and Eton Riverside Station Car Park
AL31	King Edward VII Hospital, Windsor
AL32	Sandridge House, London Road, Ascot
AL33	Sunningdale Broomhall Centre
AL34	White House, London Road, Sunningdale
AL35	Sunningdale Park, Sunningdale
AL36	Gasholder Station Whyteladyes Lane, Cookham
AL37	Land north of Lower Mount Farm Long Lane Cookham
AL38	Land East of Strande Park, Strande Lane, Cookham, Maidenhead
AL39	Land at Riding Court Road and London Road Datchet
AL40	Land to East of Queen Mother Reservoir

6.2.2 **Table 6.4** below provides a summary of the sustainability performance of the 40 sites. This table should be read in conjunction with the text narrative text provided in **Appendix C**. This table is intended as an overview of the assessments in order to provide a useful indicator of sustainability performance associated with each site.

Table 6.4: *Sustainability impact matrix of the 40 site allocations within the BLPSV-PC*

Site Allocation Reference	1 Climate change	2 Water and flooding	3 Air and noise Pollution	4 Biodiversity	5 Landscape quality	6 Cultural Heritage	7 Use of resources	8 Housing	9 Health	10 Community	11 Transport	12 Education	13 Waste	14 Economy and employment
Maidenhead Town Centre														
AL1	-	-	--	-	+	0	+	++	-	+	++	++	-	-
AL2	-	-	--	-	+	0	+	++	-	+	++	++	-	-
AL3	-	-	--	-	+	-	+	++	-	+	++	++	-	-
AL4	-	-	-	-	+	0	+	++	-	+	++	+	-	-
AL5	-	-	-	-	+	0	+	++	-	+	++	++	-	-
AL6	0	-	-	-	+	0	+	+	-	+	++	++	0	-
AL7	-	-	-	-	+	0	+	++	-	+	++	+	-	-
AL8	0	+	-	-	+	0	+	0	-	+	++	0	0	0
AL9	-	-	-	-	+	0	+	++	-	+	++	++	-	-
AL10	-	-	-	-	+	-	+	++	-	+	++	++	-	-

AL11	0	0	-	-	+	-	+	0	-	0	++	0	0	+
AL12	0	-	-	-	+	0	+	+	-	+	++	+	0	+
South West Maidenhead														
AL13	--	--	--	-	-	-	-	++	-	+	++	++	--	0
AL14	0	-	-	-	-	0	-	0	-	0	+	0	0	++
AL15	0	-	-	-	+	-	0	0	-	0	++	+	0	0
Ascot Centre Sites														
AL16	-	0	--	0	+	0	+	++	-	+	+	0	-	-
AL17	-	+	--	0	0	0	+	++	-	+	++	+	-	-
AL18	0	+	-	0	+	-	+	+	-	+	++	+	0	+
AL19	0	+	0	0	+	-	+	+	-	0	++	-	0	+
AL20	-	+	--	-	+	-	0	++	-	0	++	0	-	+
West of Windsor														
AL21	-	--	--	-	-	-	-	++	-	+	+	+	-	+
AL22	0	-	-	-	+	0	+	+	-	+	+	0	0	-
Other Maidenhead Sites														
AL23	0	-	+	-	+	0	-	+	++	+	+	++	0	-
AL24	-	-	--	-	-	0	-	++	++	+	+	++	-	+
AL25	-	--	--	-	-	-	-	++	+	+	++	++	-	+
AL26	-	0	-	-	-	0	-	++	-	0	+	0	-	+
AL27	+	0	+	+	+	0	+	0	++	+	++	0	0	0
AL28	+	0	0	+	+	0	+	0	+	+	++	0	0	0
Other Windsor Sites														
AL29	-	-	-	-	+	0	+	++	++	+	+	++	-	-
AL30	0	-	0	-	0	0	+	+	++	+	++	++	0	++
AL31	0	+	0	-	+	0	+	+	+	-	+	++	0	-
Other Ascot Sites														
AL32	0	+	0	0	+	0	+	+	-	-	++	--	0	+
Sunningdale and Sunninghill														
AL33	0	+	-	0	+	0	+	+	-	+	++	0	0	+
AL34	0	+	-	0	+	0	+	+	-	+	++	0	0	+
AL35	-	+	--	0	0	0	0	++	-	0	++	++	-	-
Other Sites														
AL36	0	-	0	-	0	0	-	+	+	0	++	0	0	+

AL37	-	-	--	-	-	0	-	++	+	0	++	0	-	+
AL38	0	-	-	-	0	0	-	+	-	0	++	0	0	+
AL39	-	-	-	-	0	-	-	+	-	+	++	++	-	+
AL40	-	-	0	-	0	-	-	++	0	+	+	0	-	+

6.3 Whole plan appraisal

6.3.1 The following chapters present an assessment of the likely significant effects associated with the BLPSV-PC in relation to the following topics:

- Air (**Chapter 7**);
- Biodiversity, flora and fauna (**Chapter 8**);
- Climatic factors (**Chapter 9**);
- Cultural heritage (**Chapter 10**);
- Human health (**Chapter 11**);
- Landscape (**Chapter 12**);
- Population and material assets (**Chapter 13**);
- Soil (**Chapter 14**); and
- Water (**Chapter 15**).

6.3.2 Each of the topic sections are presented in terms of baseline, impacts, mitigation and residual effects, where appropriate. The topics have been appraised in terms of plan-wide impacts and draw on all aspects of the SA process, including the findings presented for the assessment of policies and site allocations (see **Appendices B and C**). The assessments include consideration of the impacts arising as a consequence of the inter-relationship between the different topics and identify secondary, cumulative and synergistic effects where they arise.

7 Air

7.1 Baseline

7.1.1 A number of substances when released to the air can have harmful impacts on sensitive receptors such as vulnerable individuals and sensitive habitats. The impact of air pollution depends on how much is emitted, how harmful it is and how it interacts with other substances in the air[63]. Numerous airborne particulates that are common emissions from the human way of life are now known to adversely impact ecosystem health, many of which are subtle, but long-term[64].

7.1.2 Poor air quality is directly linked to mortality, such as through heart disease, lung disease and various cancers. In particular, vulnerable groups susceptible to the impacts of air pollution include children and older people, and those with heart and lung conditions. Particulate matter (PM) are particles within the air that are invisible to the naked eye. The smaller the particles, the greater the threat they represent to human health. PM is predominantly associated with vehicular emissions, although agriculture, combustion from domestic heating and the construction industry are also significant sources. The fraction of mortality in the Plan area associated with air pollution is higher than that for the South East of England and England as a whole (see **Table 7.1**).

Table 7.1: *Rates of mortality associated with long-term exposure to air borne particulates*[65]

Region	Mortality associated with air pollution
RBWM	5.8%
South East England	5.6%
England	5.1%

[63] Defra (2019) Clean Air Strategy 2019. Available at: https://www.gov.uk/government/publications/clean-air-strategy-2019 [Date Accessed: 30/09/19]

[64] IAQM (2017) Land-Use Planning & Development Control: Planning for Air Quality. Available at: http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf [Date Accessed: 30/09/19]

[65] Public Health Outcomes (2017) Fraction of mortality attributable to particulate air pollution. Available at: https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/4/gid/1000043/pat/6/par/E12000008/ati/102/are/E06000040/iid/30101/age/230/sex/4 [Date Accessed: 30/09/19]

7.1.3 Poor air quality, and in particular excess atmospheric nitrogen deposition, can also have a variety of impacts on the natural environment which often result in losses in biodiversity[66]. Whilst nitrogen is a major growth nutrient for plants, too much nitrogen can cause eutrophication, acidification and toxicity and is generally accepted as one of the main drivers of biodiversity change across the globe[67].

7.1.4 Local Authorities in the UK have a responsibility under Local Air Quality Management (LAQM) legislation to monitor and report on Air Quality to Defra. The most recent review into air quality in the Plan area was completed in 2018[68]. Where an authority finds that National Air Quality Objectives[69] are not likely to be met, the authority must establish an Air Quality Management Area (AQMA) and implement an Air Quality Action Plan in order to improve air quality. There are currently five AQMA's within the borough:

- Maidenhead AQMA;
- Windsor AQMA;
- Bray/ M4 AQMA;
- Imperial Street/ Leonard's Road Junction; and
- Wraysbury/ M25.

7.1.5 The issue of air quality was taken into account under SA Objective 3 'Air and noise pollution', which seeks to reduce air, noise and odour pollution. Indicators of this objective include the location of AQMAs and the proximity of development to main roads and railway lines.

[66] Sala, O. E.; *et al*., (2000) Global biodiversity scenarios for the year 2100. Science. 287 :1770-1774

[67] Air Pollution Information System (2016) Nitrogen Oxides (NOx). Available at: http://www.apis.ac.uk/overview/pollutants/overview_NOx.htm [Date Accessed: 30/09/19].

[68] Royal Borough of Windsor and Maidenhead (2018) Air Quality Annual Status Report (ASR). Available at: https://www3.rbwm.gov.uk/downloads/download/358/air_quality [Date Accessed: 30/09/19]

[69] Defra (no date) UK and EU Air Quality Limits. available at: https://uk-air.defra.gov.uk/air-pollution/uk-eu-limits [Date Accessed: 30/09/19]

7.2 Impacts on air

7.2.1 **Box 7.1** presents a plan-wide summary of the adverse impacts on air that have been identified through the SA process. These adverse impacts are those identified prior to mitigation considerations. **Box 7.2** lists the policies and site proforma information within the BLPSV-PC which would be likely to mitigate, either fully or partially, some of the identified adverse impacts on air. Where there are no mitigating policies or proformas, or the contents of the BLPSV-PC only partially mitigates the adverse impacts, a residual adverse effect is identified. **Box 7.3** explores the nature of these residual effects and, where applicable, provides further recommendations for mitigation or enhancement.

Box 7.1: *Summary of identified impacts on air*

1	**Reduction in air quality with implications for human health** The proposed development within the BLPSV-PC would be likely to situate approximately 14,896 new residents within 200m of a main road. In addition, 15 of the allocated sites are coincident with, or within 200m of, nearby AQMAs. The proposed development in these locations would be likely to situate new residents in areas where air quality is below the National Air Quality Objectives[70]. This could potentially have negative impacts on the health of local residents, with children, the elderly and those of poor health identified as the most vulnerable. It should also be noted that the proposed development within, or in close proximity to, AQMAs, would be likely to make it more difficult to achieve National Air Quality Objectives in these areas. The proposed development within the BLPSV-PC would be likely to increase the volume of traffic within the Plan area. This would be likely to result in an increase in traffic-related emissions and consequently, further decrease air quality within RBWM. This would be expected to have negative health implications for current and new residents.
2	**Reduction in air quality with implications for biodiversity** A reduction in local air quality, due to the construction and occupation of new dwellings, could potentially result in adverse impacts on local biodiversity assets and habitats. The occupation of new dwellings would be expected to increase local traffic volumes and, in turn, result in increased traffic-related emissions. An increase in air pollution from vehicle emissions could potentially have adverse impacts on biodiversity assets through mechanisms such as eutrophication, acidification and toxicity. Some sensitive ecosystems, including Chiltern Beechwood SAC, are identified to be vulnerable to the impact of

[70] Defra (no date) UK and EU Air Quality Limits. available at: https://uk-air.defra.gov.uk/air-pollution/uk-eu-limits [Date Accessed: 01/10/19]

Box 7.1: Summary of identified impacts on air	
	atmospheric nitrogen deposition, which would be expected following an increase in vehicular emissions.
3	**Increased pollutant emissions, including greenhouse gases** The proposed development within the BLPSV-PC would be likely to increase the volume of traffic within the Plan area and as such, associated transport-related emissions would be released into the atmosphere. The likely impact of the BLPSV-PC on greenhouse gases and climate change is discussed further in **Chapter 9**.

7.3 Local Plan mitigation

7.3.1 The BLPSV-PC proposes the development of at least 14,240 dwellings over the Plan period. Whilst several allocated sites are located adjacent, or in close proximity, to main roads and AQMA's, several policies and some site proforma information aim to prevent the reduction of local air quality and seek to mitigate the impact of air pollution. Many of the policies within the BLPSV-PC aim to promote sustainable transport use and reduce residents' reliance on personal car use and promote the provision of green infrastructure. The mitigating effects of the BLPSV-PC on increases in greenhouse gases are discussed in **Chapter 9**. The mitigating effects of the BLPSV-PC in relation to air quality and human health and biodiversity are discussed further in **Chapters 11 and 8** respectively. Policies and proformas which would be expected to help mitigate the impact of development on air quality are presented in **Box 7.2**.

Box 7.2: Local Plan policy/ proforma mitigation in relation to identified impacts on air quality

	Air quality impacts 1 & 2: Local Plan policy/ proforma mitigation which could help avoid or reduce a reduction in air quality which could have implications for human health and/or ecosystems (see impact 1 and 2, Box 7.1)
	Policy SP1 – Spatial Strategy for the Royal Borough of Windsor and Maidenhead This policy would be expected to help reduce personal car use across the borough, and subsequently help reduce the volume of traffic related emissions which could potentially be harmful to human and ecosystem health.
	Policy SP2 – Climate Change Enhanced green infrastructure alongside amenity areas, buildings and streets could potentially help to promote natural air filtration, and as such reduce residents' exposure to air pollution associated with traffic.

Policy QP2 – Green and Blue Infrastructure

Increased green cover would be expected to contribute towards improved air quality due to the increased uptake of carbon dioxide and filtration of pollutants associated with road transport, which could potentially help to reduce residents' exposure to air pollution.

Policy QP3 – Character and Design of New Development

This policy would be likely to help to ensure residents are not exposed to unacceptable levels of air or noise pollution, and that development "*has no unacceptable effect on the amenities enjoyed by the occupants of adjoining properties in terms of privacy, light, disturbance, vibration, pollution, dust, smell and access to sunlight and daylight*".

Policy NR2 – Nature Conservation & Biodiversity

This policy would be likely to increase green cover and promote habitat connectivity across the Plan area, and as such help to introduce greater resilience to climate change into the ecosystem. Enhancing the natural environment would be expected to provide increased carbon storage capacity and natural filtration of pollutants.

Policy NR3 – Trees, Woodlands and Hedgerows

The retention and enhancement of trees and woodland supported under this policy would be likely to boost the natural carbon sink and air filtration ecosystem services provided by trees and vegetation. This could also potentially help to provide natural filtration to reduce residents' exposure to air pollution.

Policy EP1 – Environmental Protection

This policy would be expected to ensure new development is situated in appropriate locations to minimise the risk of exposure of new or existing residents to pollution or contamination issues.

Policy EP2 – Air Pollution

This policy aims to ensure that new developments do not result in a significant increase in air pollution, and in particular ensure that air quality within or adjacent to AQMAs is protected. This policy provides detail on appropriate mitigation measures which could be implemented to help combat issues in regard to air pollution. In accordance with this policy, no new residents will be exposed to unacceptably high levels of air pollution.

Policy IF2 – Sustainable Transport

By promoting sustainable transport options under this policy, it would be anticipated that there would be a reduction of vehicle-related air pollution within the borough. The policy also aims to reduce traffic flows, which would be likely to reduce localised air pollution.

Policy IF4 – Open Space

Potential new or enhanced open spaces under this policy, including green infrastructure, would be expected to contribute towards improved air quality due to the increased uptake of carbon dioxide.

Site Proformas AL4, AL7, AL10 and AL30

These four proformas ensure development proposals "*provide appropriate mitigation measures to address the impacts of noise, vibrations and air quality*" from nearby railway lines.

Site Proformas AL5, AL7, AL9, AL11, AL19, AL30, AL32, AL36 and AL39

These proformas seek to ensure development proposals *"provide appropriate mitigation measures to address the impacts of noise and air quality"* from nearby roads.

Site Proformas AL15, AL27 and AL28

These site proformas are for Strategic Green Infrastructure allocations, including 'wildlife zones' and habitat areas. This would be likely to have benefits in terms of air filtering.

Site Proforma AL6

This proforma aims to ensure development proposals *"focus residential units away from Castle Hill and Frascati Way to mitigate noise and air quality impacts arising from traffic".*

Site Proforma AL12

This proforma aims to ensure development proposals are *"designed sensitively to mitigate air and noise pollution".*

Site Proforma AL14

This proformas seeks to ensure development proposals *"provide appropriate mitigation measures to address any impacts of the site in terms of noise, pollution and air quality on adjoining residential areas".*

Site Proforma AL23

Development proposals at Site AL23 should *"provide appropriate mitigation measures to address the impact of air quality so as to protect residential amenity".*

Site Proforma AL29

Development proposals at Site AL29 should *"integrate green and blue infrastructure at all levels throughout the site, with priority on Victoria Street and William Street frontages in order to mitigate air and noise pollution".*

Site Proforma AL31

Development proposals under this proforma should *"address the impacts of noise, vibrations and air quality arising from traffic and the adjoining NHS hospital uses in order to protect residential amenity".*

Site Proforma AL40

This site proforma aims to *"address the impacts of noise and air quality from Heathrow Airport".*

Air quality impact 3: Local Plan policy/ proforma mitigation which could help avoid or reduce increased pollutant emissions, including greenhouse gases (see impact 3, Box 7.1)

Policy SP1 – Spatial Strategy for the Royal Borough of Windsor and Maidenhead

Development within these existing built-up locations and the promotion of sustainable transport options could potentially help to reduce the requirement for personal cars and subsequently, helping to reduce greenhouse gas emissions within the Plan area.

Policy SP2 – Climate Change

The incorporation of green infrastructure, minimisation of flood risk and promotion of natural heating systems would be expected to help reduce the borough's contributions to the causes of climate change.

Policy QP1 – Sustainability and Placemaking

This policy promotes walkable neighbourhoods and attractive routes to encourage walking and cycling. This would be likely to help reduce reliance on personal car use, and therefore, reduce greenhouse gas emissions.

Policy QP3 – Character and Design of New Development

Reductions in GHG emissions would be likely to be associated with sustainable transport and increased uptake of active travel which is promoted under this policy.

Policy NR5 – Renewable Energy

The encouragement of renewable energy infrastructure developments under this policy could potentially help to promote low carbon energy schemes, decreasing the volume of carbon emitted in the Plan area and reducing reliance on energy generation from fossil fuels.

Policy IF2 – Sustainable Transport

The policy aims to promote walking and cycling, through provision of suitable infrastructure such as cycle parking. This policy would also encourage the use of electric vehicles. Development proposals would be designed to *"prioritise walking, cycling and public transport over the private car"* and seek opportunities for providing better connected routes, especially across major roads, railway lines or rivers. This would be expected to help reduce the volume of traffic related emissions across the Plan area.

Policy IF5 – Rights of Way and Access to the Countryside

The improvement of the local PRoW and cycle network promoted within this policy would help to encourage a healthy lifestyle and travel via walking or cycling rather than personal car use. Increased facilitation of sustainable transport options could potentially help to manage traffic flows and reduce road transport related emissions of greenhouse gases.

7.4 Residual effects on air

7.4.1 Following the implementation of the BLPSV-PC mitigation, residual adverse effects on air quality would be anticipated. These impacts primarily relate to increases in vehicular emissions and subsequently pollutant emissions such as, greenhouse gases. The residual effects are discussed in **Box 7.3**.

Box 7.3: *Residual effects and recommendations for air*

Residual effects	Further details of the residual effect
Reduction in air quality with implications for human health and/or ecosystems	The introduction of 33,606 new residents under the BLPSV-PC would be expected to increase vehicle emissions in the Plan area, with adverse implications for human and ecosystem health. The policies and site proformas outlined in **Box 7.2** would be expected to reduce the likelihood of adverse impact occurring and could potentially help reduce these adverse impacts. However, due to the volume of development proposed, an increase in traffic flows and subsequent reduction of air quality would be expected to have residual adverse effects on human and ecosystem health. Over time, advances in technologies would be expected to help reduce the volume of pollutants released into the atmosphere from vehicles. This may be in the form of increased use of electric vehicles or promoting the use of sustainable transport options rather than personal car use. Advances in legislation, national policy and behavioural changes would also be expected to lead to improvements in local air quality. Strategies implemented through the Local Transport Plan[71] and AQMA Air Quality Action Plan[72] would complement BLPSV-PC policies. The Clean Air Strategy[73] also sets out strategies to reduce emissions. Together, this would be expected to target specific mitigation and reduce air pollution due to development, to some extent. A reduction in air quality in the borough would be expected to be a long-term but reversible impact. **Recommendations:** It is recommended that traffic flows are monitored on main roads within the borough. This would help indicate any potential harmful reductions in air quality due to increases in vehicular emissions.
Increased pollutant emissions, including greenhouse gases	Whilst the policies and site proformas outlined in **Box 7.2** would be expected to reduce the likelihood of adverse impacts occurring, an increase in pollutants including greenhouse gases would be expected following the development proposed within the BLPSV-PC. The introduction of 33,606 residents would be expected to increase traffic volumes and energy demand, which would be expected to result in an increase of pollutant emissions. This would in turn exacerbate the effects of climate change. However, it would be expected that over time, advances in technologies and alternative solutions to energy generation would be expected to reduce this adverse impact by some extent. An increase in pollutant emissions in RBWM would be likely to be a long-term but potentially reversible impact. **Recommendations:** It is recommended that uptake of public transport is monitored within the borough and the proportion of energy generated from renewable sources should be monitored. In addition, a climate change management plan should be prepared. This should indicate a reduction of pollutant, including greenhouse gas in RBWM.

[71] RBWM Council (2012) Local Transport Plan 2012 – 2026. Available at: https://www3.rbwm.gov.uk/downloads/download/90/local_transport_plan_documents [Date Accessed: 11/10/19]

[72] RBWM Council (2015) Air Quality Action Plan – update for The Royal Borough of Windsor and Maidenhead. Available at: https://www3.rbwm.gov.uk/downloads/download/358/air_quality [Date Accessed: 11/10/19]

8 Biodiversity, flora and fauna

8.1 Baseline

8.1.1 Individually and collectively, 'ecosystem services' provide significant environmental, economic and social benefits that support sustainable development and prosperous communities[74]. The range of ecosystem services provided by the natural environment can include crop production, water regulation, climate regulation, green energy and spaces for recreation and education.

8.1.2 Paragraph 170 of the NPPF[75] states that *"planning policies and decisions should contribute to and enhance the natural and local environment by … recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services".*

8.1.3 The Plan area's natural capital (i.e. its natural resources and ecological processes that contribute to human welfare) yield the flow of valuable ecosystem services into the future. Flows of ecosystem services are diminished when natural capital is degraded.

8.1.4 The 2011 White Paper 'The Natural Choice: securing the value of nature'[76] highlighted a continued loss of biodiversity in the UK, increasing fragmentation of habitats and a need for coordinated action across sectors to put the value of nature at the heart of decision making.

[73] DEFRA (2019) Clean Air Strategy 2019. Available at: https://www.gov.uk/government/publications/clean-air-strategy-2019 [Date Accessed: 11/10/19]

[74] UK National Ecosystem Assessment (2012) Millennium Ecosystem Assessment. Available at: http://uknea.unep-wcmc.org/About/ConceptualFramework/MillenniumEcosystemAssessment/tabid/112/Default.aspx [Date Accessed: 30/09/19]

[75] MHCLG (2019) National Planning Policy Framework. Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2 [Date Accessed: 30/09//19]

[76] Defra (2011) The Natural Choice: securing the value of nature. Available at: https://www.gov.uk/government/publications/the-natural-choice-securing-the-value-of-nature [Date Accessed: 30/09/19]

8.1.5 The 'State of Nature'[77] report found that of the 7,616 species monitored across the UK since 1970, 56% are in decline whilst 40% showed strong or moderate declines. This has largely been the result of climate change and land use change induced habitat loss[78], a phenomenon which leads to a reduction in total habitat area and increasingly fragmented habitats[79]. The movement of species between fragmented habitats is restricted by barriers, such as roads, fences and buildings, which leads to populations of species being isolated in small gene pools[80]. The consequences of this are local extinctions, which erodes the resilience of ecosystems and undermines their functions and service provision[81].

8.1.6 The ecological network of the Plan area includes a range of designated statutory and non-statutory sites including Special Areas of Conservation (SACs), Sites of Special Scientific Interest (SSSIs), Local Nature Reserves (LNRs), Local Wildlife Sites (LWSs) and stands of ancient woodland. The Plan area also supports a plethora of Priority Habitats protected under the Natural Environment and Rural Communities (NERC) Act[82]. These priority habitats support a diverse range of Priority Species.

8.1.7 Biodiversity, flora and fauna were predominantly considered under SA Objective 4 'Biodiversity and geodiversity' which, in part, aims to help protect and enhance the natural environment of the borough. Impacts on this objective are considered to be indicated by factors including:

- The location and condition of areas considered important in terms of biodiversity, including SPAs, SACs, Ramsar sites, SSSIs, NNRs and LNRs;
- The impact of the proposal on Local Wildlife Sites. Local Geological sites, ancient woodland and priority habitats.

[77] State of Nature (2016) State of Nature Report 2016. Available at: https://www.rspb.org.uk/our-work/conservation/projects/state-of-nature-reporting [Date Accessed: 12/03/19]

[78] UK National Ecosystem Assessment (2014) The UK National Ecosystem Assessment: Synthesis of the Key Findings. Available at: https://www.unep-wcmc.org/resources-and-data/the-uk-national-ecosystem-assessment--synthesis-of-the-key-findings-and-technical-reports [Date Accessed: 30/09/19]

[79] Landscape Institute (2016) Connectivity and Ecological Networks, Technical Information Note. Available at: https://www.landscapeinstitute.org/publication/connectivity-and-ecological-networks-tin/ [Date Accessed: 30/09/19]

[80] Krosby, M., *et al*., (2010) Ecological connectivity for a changing climate. Conservation Biology, 24:1686-1689.

[81] Oliver, TH., *et al*., (2015) Declining resilience of ecosystem functions under biodiversity loss. Nature Communications, 8:10122

[82] Natural Environment and Rural Communities Act 2006. Available at: https://www.legislation.gov.uk/ukpga/2006/16/contents [Date Accessed: 30/09/19]

8.2 Impacts on biodiversity, flora and fauna

8.2.1 **Box 8.1** presents a plan-wide summary of the adverse impacts on biodiversity, flora and fauna that have been identified through the SA process. These adverse impacts are those identified prior to mitigation considerations. **Box 8.2** lists the policies and site proforma information within the BLPSV-PC which would be likely to mitigate, either fully or partially, some of the identified adverse impacts on biodiversity, flora and fauna. Where mitigating policies or proformas are silent, or the contents of the BLPSV-PC only partially mitigates the adverse impacts, a residual adverse effect is identified. **Box 8.3** explores the nature of these residual effects and, where applicable, provides further recommendations for mitigation or enhancement.

Box 8.1: *Summary of identified impacts on biodiversity, flora and fauna*

1	**Threats or pressures to internationally and European designated biodiversity sites** There are several Natura 2000 sites located in and around the borough, namely; Chilterns Beechwoods SAC, Windsor Forest and Great Park SAC, Thursley, Ash, Pirbright and Chobham SAC, Burnham Beeches SAC, Thames Basin Heaths SPA and South West London Waterbodies SPA and Ramsar site. Many of these sites are vulnerable to threats and pressures which may arise due to development, including poor air quality, hydrological changes and increased recreational disturbances. Increased volumes of traffic which would be likely to arise as a result of the development proposed within the BLPSV-PC, would be expected to increase localised vehicle emissions, having adverse impacts on nearby biodiversity. The Appropriate Assessment will explore this matter, along with hydrology and recreation, and will make recommendations to mitigate identified adverse impacts
2	**Threats or pressures to nationally designated biodiversity sites** Although none of the site allocations within the BLPSV-PC are coincident with, or located adjacent to, a SSSI or NNR, many of the sites are located within a SSSI IRZ, which states that development proposals in these zones should be consulted upon with Natural England (see **Table 4.6** and **Appendix C** for further details).
3	**Threats or pressures to locally designated biodiversity sites** None of the sites allocated within the BLPSV-PC are coincident with an LNR, LWS or LGS. Several of the sites are located in close proximity to an LNR, or adjacent to an LWS. Adverse impacts due to development on these locally designated sites could potentially include increased recreational disturbance and localised poor air quality.

***Box 8.1:** Summary of identified impacts on biodiversity, flora and fauna*

4	**Impacts on priority habitats and ancient woodland** Sites AL13, AL14, AL16, AL17, AL21, Al24, AL35 and AL40 are coincident with priority habitats, including deciduous woodlands and traditional orchards. These habitats are capable of supporting a range of priority species. The scale of development proposed within the BLPSV-PC could potentially make it difficult to protect and enhance priority habitats and prevent the direct loss of these biodiversity assets. Stands of ancient woodland are primarily located within Windsor Great Park and in more rural areas of the borough to the west and south. Site AL24 is located approximately 350m north of a stand of ancient woodland. However, the proposed development at this site, or any other allocated site, would not be expected to result in adverse impacts on ancient woodlands.
5	**Fragmentation of the local ecological network** The Plan area has a functioning ecological network comprised of species and habitats. Several site allocations within the BLPSV-PC are located on previously undeveloped land. Some of this land is thought to provide links between important habitats (e.g. due to the presence of hedgerow, mature trees or scrubland). Whilst in many cases these linkages can be conserved despite development, it would be likely that in some cases there will be a direct loss of links. It is considered to be likely that development could reduce the effectiveness of links in some circumstances, such as disturbance from new houses and residents.

8.3 Local Plan mitigation

8.3.1 Several policies within the BLPSV-PC aim to protect and enhance biodiversity features within the Plan area, including Policies QP2, NR2 and NR4. The policies and site proformas discussed in **Box 8.2** below would be expected to provide effective and significant levels of protection for biodiversity assets, and therefore, would be expected mitigate some of the adverse impacts identified in **Box 8.1**.

Box 8.2: *Local Plan policy/ proforma mitigation for identified impacts on biodiversity*

Biodiversity impacts 1, 2 and 3: Local Plan policy/ proforma mitigation which could help avoid or reduce threats or pressures to internationally/ European/ nationally and locally designated biodiversity sites (see impact 1, 2 and 3, Box 8.1)

Policy NR2 – Nature Conservation & Biodiversity

This policy would help to ensure that new development does not result in adverse impacts on designated biodiversity sites or sites of nature conservation importance.

Policy NR4 – Thames Basin Heaths Special Protection Area

This policy provides protection of the Thames Basin Heaths SPA by restricting residential development within 400m of the SPA and requiring development proposals which could potentially cause harm to the SPA to demonstrate that suitable mitigation will be put in place. Additionally, the delivery and planning of new strategic SANGs and management through the SAMM are required under this policy for development proposals located within the zone of influence.

Site Proformas AL16, AL17, AL18, AL19, AL32 and AL34

The proformas of these six sites seek to ensure that development proposals *"mitigate the impact of residential development on the Thames Basin Heaths Special Protection Area".*

Site Proforma AL33

This proforma aims to ensure development proposals at Site AL33 *"provide a financial contribution to mitigate the impact of residential development on the Thames Basin Heaths Special Protection Area".*

Site Proformas AL20 and AL35

The site proformas at these two locations seek to ensure that development proposals at these two sites provide Suitable Alternative Natural Greenspaces (SANGs) as mitigation for potential adverse impacts on Thames Basin Heaths SPA.

Site Proformas AL4, AL9, AL10 and AL28

These site proformas seek to ensure that development proposals protect and enhance nearby Local Wildlife Sites.

Site Proforma AL32

This proforma aims to ensure that development proposals at Site AL32 *"mitigate impacts on the nearby Englemere Pond SSSI/Local Nature Reserve".*

Site Proforma AL15

Development proposals at Site AL15 should *"preserve and enhance biodiversity by avoiding built development next to existing areas of biodiversity value, including the Nature Reserve/SSSI and the cemetery which will prevent noise/light pollution from affecting wildlife in accordance with the objectives of the Bray to Eton Pits and Meadow Biodiversity Opportunity Area".*

Site Proforma AL19

Site proforma AL19 aims to ensure that development proposals at the site are *"considerate of the proximity to the nearby SSSI – Englemere Pond".*

Biodiversity impact 4: Local Plan policy/ proforma mitigation which could help avoid or reduce impacts on priority habitats and ancient woodland (see impact 4, Box 8.1)

Policy NR2 – Nature Conservation & Biodiversity

This policy would help to ensure that development proposals throughout the Plan area *"maintain, protect and enhance … the presence of protected species".* This policy also helps to ensure that development proposals do not result in adverse impacts on protected habitats and species.

Site Proformas AL14 and AL16

These site proformas aim to ensure development proposals *"conserve and enhance local biodiversity and local Priority Habitat areas".*

Site Proforma AL24

Site AL24 is located in close proximity to ancient woodland. The site proforma states that development proposals at this site should *"retain valuable trees at site boundaries and enhance biodiversity across the site by placing sports pitches in a woodland setting".*

Biodiversity impact 5: Local Plan policy/ proforma mitigation which could help avoid or reduce fragmentation of the local ecological network (see impact 5, Box 8.1)

Policy SP2 – Climate Change

Through the *"use of trees and other planting"* and encouraging the use of green and brown roofs and walls, including use of native plants, this policy could potentially help to prevent the fragmentation of the ecological network in the local area.

Policy QP1 – Sustainability and Placemaking

Under this policy, biodiversity and the green and blue infrastructure networks would be enhanced. This would be expected to provide benefits to flora and fauna including the provision of new or enhanced habitats, including important ecological corridors and green networks such as alongside watercourses.

Policy QP2 – Green and Blue Infrastructure

Policy QP2 seeks to maintain, enhance and enlarge blue and green infrastructure assets and networks. This could potentially provide additional habitats and improve connectivity for flora and fauna, and as such improve the biodiversity value of the Plan area. Connectivity between habitats, including stepping-stone habitats, are particularly important when considering global climatic trends as they provide opportunities for the movement of species and adaptation to climate change.

Policy QP3 – Character and Design of New Development

By protecting trees and vegetation and incorporating green and blue infrastructure schemes into development proposals, this policy would be likely to prevent a net loss in vegetation across the Plan area.

Policy QP4 – River Thames Corridor

This would be likely to help conserve priority habitats and protect flora and fauna which rely on the river and riparian ecosystem, safeguarding its role as a wildlife network. This policy states

that new development should seek *"opportunities for the restoration and enhancement of natural elements of the river environment".*

Policy NR1 – Managing Flood Risk and Waterways

This policy would help to ensure that development proposals do not impact the ecological quality of surrounding waterways.

Policy NR2 – Nature Conservation & Biodiversity

This policy would help to ensure that development proposals throughout the Plan area *"maintain, protect and enhance the biodiversity of application sites including features of conservation value such as hedgerows, trees, river corridors and other water bodies and the presence of protected species".*

Policy NR3 – Trees, Woodlands and Hedgerows

This policy would be expected to help to ensure that trees, woodlands and hedgerows lost due to development would be minimal, and the creation of new or enhanced habitats would be encouraged. Trees, woodlands and hedgerows are known to support a vast array of important flora and fauna and can serve as useful connecting habitats to facilitate movement of species.

Policy EP1 – Environmental Protection

This policy states that development proposals *"should seek to conserve, enhance and maintain existing environmental quality in the locality, including areas of ecological value (land and water based)"*. Therefore, it would be expected that local wildlife habitats would be conserved and enhanced where possible, and the Plan area's green and blue infrastructure networks would be maintained and improved.

Policy EP3 – Artificial Light Pollution

This policy would help to ensure that artificial light pollution associated with new development does not adversely impact local habitats and species, including requirements for development proposals to *"reduce light spill into river corridors and other wildlife corridors"*. This policy would be expected to minimise disturbance and facilitate connectivity of natural, unlit habitats.

Policy EP4 – Noise

This policy would help to reduce noise pollution created due to new developments which could potentially reduce impacts from noise pollution on local biodiversity.

Policy IF3 – Local Green Space

This policy aims to protect existing Local Green Spaces. This would be expected to help protect the local ecological network and prevent fragmentation.

Policy IF4 – Open Space

This policy seeks to provide *"new or upgraded open space as part of the Borough's Green Infrastructure network"*. This would be likely to help protect and enhance the local ecological network.

Site Proformas AL15, AL27 and AL28

These site proformas are for Strategic Green Infrastructure allocations, including 'wildlife zones' and habitat areas, which would be expected to help protect the existing ecological network.

All Site Proformas

All proformas include provision of green infrastructure, to some extent. Many of the proformas state there will be biodiversity enhancements. This would be likely to result in an increase in the provision of green infrastructure across the Plan area and help reduce the risk of fragmentation of the ecological network.

8.4 Residual effects on biodiversity, flora and fauna

8.4.1 Following the implementation of BLPSV-PC policies and site proformas, a residual adverse effect in regard to threats and pressures to designated biodiversity sites would be expected. The BLPSV-PC proposes the provision of green infrastructure and other benefits to the local ecological network, but specific threats and pressures to designated biodiversity sites, such as Chiltern Beechwoods SAC remain. The residual effects of the BLPSV-PC on biodiversity is discussed in **Box 8.3**.

Box 8.3: *Residual effects and recommendations for biodiversity, flora and fauna*

Residual effects	Further details of the residual effect
Threats or pressures to internationally/ European/ nationally and locally designated biodiversity sites	Policies and information within the site proformas aim to mitigate potential adverse impacts associated with the proposed development on designated sites. However, in the absence of the completed HRA report, it is uncertain if the proposed development within the BLPSV-PC would result in adverse impacts on designated biodiversity sites in regard to public access and disturbance, hydrological change and air quality. On a precautionary basis, it has been assumed that there would be a residual adverse effect on surrounding internationally designated biodiversity sites. Threats and pressures on designated biodiversity sites could potentially be a long-term but reversible impact. **Recommendations:** It is recommended that the conclusions of the HRA are incorporated into the BLPSV-PC to ensure that site allocations would not result in adverse impacts to nearby designated sites.
Impacts on priority habitats and ancient woodland	None of the allocated sites within the BLPSV-PC would be likely to a stand of ancient woodland. Sites AL13, AL14, AL16, AL17, AL21, Al24, AL35 and AL40 are coincident with priority habitats, including deciduous woodlands and traditional orchards. Policy NE2 within the BLPSV-PC would be expected to ensure that development proposals would not result in adverse impacts to these protected habitats and associated protected species.
Fragmentation of the local ecological network	Numerous policies and information within the site proformas aim to ensure development proposals incorporate green and blue infrastructure and propose the increased provision of the local green infrastructure network. Although the proposed development would be expected to result in the loss of greenfield land and associated biodiversity to some extent, policies and

Residual effects	Further details of the residual effect
	site proforma information would be expected to result in a positive residual effect on the local ecological network.

9 Climatic factors

9.1 Baseline

9.1.1 Mitigating and adapting to climate change is a priority in the UK. It is necessary for local authorities to help minimise their contribution to its causes, such as by reducing greenhouse gas (GHG) emissions and enhancing natural carbon sinks, such as through increasing tree cover. Site allocations that are proposed for the development of a significant number of residential dwellings would be likely to result in negative impacts in terms of carbon emissions.

9.1.2 The estimated per capita emissions in the Plan area was 5.7 tonnes in 2017, which is a decline of 2.1 tonnes for residents since 2010[83]. The estimated total carbon emissions in the Plan area was 850,900 tonnes in 2017, which is a declined of approximately 280,000 tonnes since 2010[84].

9.1.3 A major source of GHGs is from vehicle emissions. The vast majority of residents would be likely to have at least one vehicle per household. It is likely that residential development proposed within the Local Plan would result in an associated increase in the number of vehicles on the road in the Plan area, and as such a consequent increase in GHG emissions would be expected, contributing to the Greenhouse Effect and exacerbating anthropogenic climate change. These GHG emissions are also likely to have implications for human health and biodiversity (see **Chapters 7, 8 and 11**).

[83] Department for Business, Energy and Industrial Strategy (2019) UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2017. Available at: https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2017 [Date Accessed: 30/09/19]

[84] Ibid

9.1.4 One strategy to combat GHG emissions is to reduce the quantity of energy produced via fossil fuel led energy production[85]. In the last two decades, there has been a significant increase in the volume of energy generated through renewable energy sources. In 2017, 29.3% of the electricity generated in the UK was from renewable sources, compared to 24.5% in 2016[86].

9.1.5 Vegetation acts as a carbon sink, providing an important ecosystem service. Some site allocations proposed in the BLPSV-PC would be likely to result in a net loss in vegetation cover (i.e. those comprising previously undeveloped land), and as such, may compromise the carbon storage capacity of the natural environment.

9.1.6 Climate change is anticipated to increase the risk of natural disasters to the borough, particularly through flooding. The issue is was taken into account in SA Objective 1 'Climate Change', which seeks to reduce emissions of greenhouse gases and ensure that the borough is prepared for the impacts of climate change.

9.2 Impacts on climatic factors

9.2.1 **Box 9.1** presents a plan-wide summary of the adverse impacts on climatic factors that have been identified through the SA process. These adverse impacts are those identified prior to mitigation considerations. **Box 9.2** lists the policies and site proforma information within the BLPSV-PC which would be likely to mitigate, either fully or partially, some of the identified adverse impacts on climatic factors. Where mitigating policies or proformas are silent on climatic factors, or the contents of the BLPSV-PC only partially mitigates the adverse impacts, a residual adverse effect is identified. **Box 9.3** explores the nature of these residual effects and, where applicable, provides further recommendations for mitigation or enhancement.

[85] RTPI (2018) Renewable Energy: Planning's role in delivering renewable energy in the new ow carbon economy. Available at: https://www.rtpi.org.uk/knowledge/practice/renewable-energy/ [Date Accessed: 30/09/19]

[86] Department for Business, Energy and Industrial Strategy (2018) UK Energy in Brief. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728374/UK_Energy_in_Brief_2018.pdf [Date Accessed: 30/09/19]

Box 9.1: *Summary of identified impacts on climatic factors*	
1	**Increased greenhouse gas and carbon emissions** The proposed development within the BLPSV-PC could potentially increase local carbon emissions by approximately 22.5%. This would be likely to result in adverse impacts, due to the acceleration of anthropogenic climate change.
2	**Loss of green infrastructure** The proposed development within the BLPSV-PC could potentially result in the loss of approximately 176.5ha of previously undeveloped land. Some of the proposed development could potentially also result in the loss of trees, hedgerows and other vegetation currently on site. Green infrastructure is vital in helping to reduce the adverse impacts of climate change.

9.3 Local Plan mitigation

9.3.1 The contents of the BLPSV-PC would be likely to help reduce the adverse impacts of the Plan in relation climatic factors, with policies and site proformas focusing on the integration of green infrastructure. Policies and proformas which are anticipated to help mitigate the impacts identified in **Box 9.1,** are discussed in **Box 9.2**.

Box 9.2: *Local Plan policy/ proforma mitigation for identified impacts on climatic factors*

	**Climatic factors, impact 1: Local Plan policy/ proforma mitigation which could help avoid or reduce Increased greenhouse gases and carbon emissions (see impact 1, Box 9.1)**
	Policy SP1 – Spatial Strategy for the Royal Borough of Windsor and Maidenhead Development within these existing built-up locations and the promotion of sustainable transport options could potentially help to reduce the use of personal cars and subsequently, helping to reduce greenhouse gas emissions within the Plan area.
	Policy SP2 – Climate Change The incorporation of green infrastructure, minimisation of flood risk and promotion of natural heating systems would be expected to help reduce the borough's contributions to the causes of climate change.
	Policy QP1 – Sustainability and Placemaking This policy promotes walkable neighbourhoods and attractive routes to encourage walking and cycling. This would be likely to help reduce reliance on personal car use and therefore, reduce greenhouse gas emissions.

Policy QP3 – Character and Design of New Development

This policy would be likely to promote climate change resilience and help reduce carbon emissions associated with development, due to the promotion of energy efficient design. Reductions in greenhouse gas emissions would be likely to be associated with sustainable transport and increased uptake of active travel, which is promoted under this policy.

Policy QP4 – River Thames Corridor

This policy promotes renewable energy generation, which would be likely help reduce greenhouse gas emissions.

Policy NR2 – Nature Conservation & Biodiversity

This policy would be likely to increase vegetation and habitats and as such, help to introduce greater resilience to climate change into the ecosystem. Enhancing the natural environment would be expected to provide increased carbon storage capacity and natural filtration of pollutants.

Policy NR5 – Renewable Energy

The encouragement of renewable energy infrastructure developments under this policy could potentially help to promote low carbon energy schemes, decreasing the volume of carbon emitted in the Plan area and reducing reliance on energy generation from fossil fuels.

Policy EP2 – Air Pollution

This policy encourages the provision of sustainable transport methods and electric car charging points in order to minimise reliance on personal car use and would be expected to minimise the Plan area's contributions to climate change by offering alternative, lower emission and more sustainable means of transport.

Policy IF2 – Sustainable Transport

The policy aims to promote walking and cycling, through provision of suitable infrastructure. This policy also encourages the use of electric vehicles. Development proposals would be designed to *"prioritise walking, cycling and public transport over the private car"* and seek opportunities for providing better connected routes, especially across major roads, railway lines or rivers. This would be expected to help reduce the volume of traffic related emissions across the Plan area.

Policy IF5 – Rights of Way and Access to the Countryside

The improvement of the local PRoW and cycle network promoted within this policy would help to encourage healthy lifestyles and travel by foot or bicycle rather than personal car use. Increased facilitation of sustainable transport options could potentially help to manage traffic flows and reduce road transport related emissions of greenhouse gases.

Site Proformas AL1, AL2, AL3, AL4, AL5, AL7, AL8, AL9, AL10, AL13, AL14, AL16, AL17, AL18, AL20, AL21, AL22, AL24, AL25, AL26, AL29, AL35, AL36, AL37, AL39 and AL40

These site proformas seek to improve public transport, aiming to ensure that *"the bus is an attractive alternative to the private car for local journeys"*, which would be likely to help reduce vehicular emissions to some extent.

All Site Proformas

All of the site proformas aim to ensure the provision of green infrastructure within development proposals, which would be expected to help mitigate some of the adverse impacts of carbon emissions, including increases in vegetation acting as a carbon sink.

Climatic factors, impact 2: Local Plan policy/ proforma mitigation which could help avoid or reduce loss of green infrastructure (see impact 2, Box 9.1)

Policy QP2 – Green and Blue Infrastructure

Increased vegetation would be expected to mitigate the potential loss of green infrastructure across the borough and contribute towards the increased uptake of carbon dioxide and filtration of pollutants.

Policy NR2 – Nature Conservation & Biodiversity

This would be likely to protect existing vegetation and promote habitat connectivity across the Plan area.

Policy NR3 – Trees, Woodlands and Hedgerows

This policy would be expected to help to ensure that trees, woodlands and hedgerows lost due to development would be minimal, and the creation of new or enhanced habitats would be encouraged.

Policy IF4 – Open Space

This policy proposed the allocation of three sites as new or enhanced open space, which would be likely to help contribute to the green infrastructure network across the borough.

All Site Proformas

All of the site proformas aim to ensure the provision of green infrastructure within development proposals, which would be expected to help mitigate some of the adverse impacts of carbon emissions, including increases in vegetation acting as a carbon sink.

Site Proformas AL15, AL27 and AL28

These site proformas are for Strategic Green Infrastructure allocations, including 'wildlife zones' and habitat areas. The proposed increase in green infrastructure would be likely to be beneficial in terms of enhancing carbon sinks.

9.4 Residual effects on climatic factors

9.4.1 The BLPSV-PC sets out several policies and includes numerous site-specific requirements within the site proformas which aim to help mitigate the adverse impacts relating to climatic factors (see **Boxes 9.1** and **9.2**). However, the implementation of these requirements would not be expected to fully mitigate the adverse impacts associated with net increases in greenhouse gases. **Box 9.3** below lists the likely residual effects of the BLPSV-PC in relation to climatic factors and, where applicable, provides further mitigation or enhancement recommendations.

Box 9.3: *Residual effects and recommendations for climatic factors*

Residual effects	Further details of the residual effect
Increased greenhouse gas and carbon emissions	The proposed development of 14,240 dwellings across the Plan area would be expected to increase the local population by 33,606 residents. These residents would be expected to increase traffic flows and vehicular emissions, as well as increase energy demand in the borough. This would, in turn, exacerbate the effects of climate change. The construction and occupation of at least 14,240 dwellings, as well as the development of large areas of employment floorspace to help create at least 11,200 new employment opportunities, would be likely to rely on the use of materials known to have a high carbon footprint, such as concrete, cement and steel. The policies and proforma information described in **Box 9.2** above would not be expected to fully mitigate the adverse impacts on the climate as a result of this volume of new development. However, it would be expected that over time, advances in technologies and alternative solutions to energy generation would be expected to reduce this adverse impact by some extent. An increase in greenhouse gas emissions in RBWM would be likely to be a long-term but potentially reversible impact. **Recommendations:** It is recommended that uptake of public transport is monitored within the borough. In addition, the proportion of energy generated from renewable sources should be monitored. This should indicate a reduction of pollutant, including greenhouse gases in RBWM.
Loss of green infrastructure	Numerous policies and information within the site proformas aim to ensure development proposals incorporate green and blue infrastructure and propose the increased provision of the local green infrastructure network. Although the proposed development would be expected to result in the loss of greenfield land and associated green infrastructure to some extent, policies and site proforma information would be expected to mitigate this loss of green infrastructure.

10 Cultural heritage

10.1 Baseline

10.1.1 England has one of the greatest diversities of historic places[87]. Heritage designations help to celebrate and conserve buildings and places that provide a source of prosperity, wellbeing and community cohesion.

10.1.2 The borough has a rich cultural heritage, with multiple landmarks of national significance, including Windsor Castle and Windsor Great Park. There is a broad range of Listed Buildings, Scheduled Monuments, Registered Parks and Gardens and Conservation Areas throughout the borough. These assets enhance sense of place and create a distinctive character to the Plan area.

10.1.3 New development brings potential threats as well as opportunities in relation to the historic environment. Economic success within historic towns and villages can have a direct link to the quality of the historic environment[88].

10.1.4 Maintaining local distinctiveness, character and sense of place alongside delivering development can present challenges. However, new development can also stimulate new investment and potentially enhance the local townscape or improve the accessibility of heritage assets for local residents.

10.1.5 Building in Context[89] is a toolkit which aims to help local authorities enhance development proposals to better reflect its historic surroundings and local context. The eight Building in Context principles are that a successful project will:

- Start with an assessment of the value of retaining what is there;
- Relate to the geography and history of the place and lie of the land;
- Be informed by its own significance so that its character and identity will be appropriate to its use and context;

[87] Historic England (2018) Places Strategy. Available at: https://historicengland.org.uk/advice/planning/place-making-and-design/#Section5Text [Date Accessed: 30/09/19]

[88] Ibid

[89] Building in Context (no date) The BiC Toolkit. Available at: http://www.building-in-context.org/the-bic-toolkit/ [Date Accessed: 30/09/19]

- Sit happily in the pattern of existing development and the routes through and around it;
- Respect important views;
- Respect the scale of neighbouring buildings;
- Use materials and building methods which are as high quality as those used in existing buildings; and
- Create new views and juxtapositions which add to the variety and texture of the setting.

10.1.6 Historic England administers the list of nationally designated heritage assets, which includes Scheduled Monuments, Listed Buildings and Registered Parks and Gardens. Conservation Areas are also designated heritage assets, protected at the national level. Berkshire Archaeology[90] hold records on local Historic Environment Records.

10.1.7 Heritage assets are predominantly considered under SA Objective 6 'Cultural heritage', which seeks to enhance, conserve and manage sites, features and areas of historic and cultural importance.

10.2 Impacts on cultural heritage

10.2.1 **Box 10.1** presents a plan-wide summary of the adverse impacts on cultural heritage that have been identified through the SA process. These adverse impacts are those identified prior to mitigation considerations. **Box 10.2** lists the policies and site proforma information within the BLPSV-PC which would be likely to mitigate, either fully or partially, some of the identified adverse impacts on cultural heritage. Where mitigating policies or proformas are silent, or the contents of the BLPSV-PC only partially mitigates the adverse impacts, a residual adverse effect is identified. **Box 10.3** explores the nature of these residual effects and, where applicable, provides further recommendations for mitigation or enhancement.

***Box 10.1:** Summary of identified impacts on cultural heritage*	
1	**Alter character and/ or setting of Scheduled Monuments (SMs)** Any proposed development in close proximity to an SM could potentially result in substantial harm to a nationally designated asset and/or its setting. SMs comprise a variety historic features including below ground remains, burial mounds and standing stones, for example. Sites AL14 and AL20 are coincident with 'Mesolithic site, Moor Farm, Holyport,

[90] Heritage Gateway (2018) Berkshire Archaeology. Available at: https://www.heritagegateway.org.uk/gateway/chr/herdetail.aspx?crit=&ctid=97&id=4769 [Date Accessed: 30/09/19]

***Box 10.1:** Summary of identified impacts on cultural heritage*	
	Bray Wick' and 'Bell barrow on Bowledge Hill' SMs, respectively. Sites AL13, AL29 and AL30 are located in close proximity to SMs. The proposed development at these five sites could potentially alter the character and/ or setting of these SMs.
2	**Alter character and/ or setting of Registered Parks and Gardens (RPGs)** Registered Parks and Gardens (RPGs) are designated heritage assets which Local Planning Authorities must consider within in their decision-making processes. Site AL35 is partly coincident with 'Sunningdale Park (Civil Service College)' RPG. Sites AL13, AL29, AL30, AL31 and AL39 are located adjacent, or in close proximity, to RPGs. The proposed development at these five sites could potentially alter the character and/ or setting of these RPGs.
3	**Alter character and/ or setting of Listed Buildings** Any proposed development which is coincident with, or is located in close proximity to, a Listed Building has the potential to affect both the asset itself and its setting. Grade I and II* Listed Buildings are considered to be those of greatest historic or architectural significance. The majority of the Listed Buildings located within the Plan area are Grade II Listed. Sites AL29 and AL32 coincide with Listed Buildings, Sites AL9, AL20, AL21, AL32 and AL40 are located adjacent to Listed Buildings and many of the site allocations are located within close proximity to surrounding Listed Buildings. The proposed development at these sites could potentially alter the character and/ or setting of these Listed Buildings.
4	**Alter character and/ or setting of Conservation Areas** Conservation Areas are identified as areas of architectural or historic interest, the characteristics of which should be preserved or enhanced. Any proposed development within or in proximity to a Conservation Area has the potential to adversely impact on the heritage asset and its setting. Sites AL3 and AL29 are coincident with Conservation Areas. Sites AL30, AL31 and AL39 are located adjacent, or in close proximity, to Conservation Areas and many of the site allocations are located within close proximity to surrounding Conservation Areas. The proposed development at these five sites could potentially alter the character and/ or setting of these Conservation Areas.
5	**Alter character and/ or setting of archaeological features** Approximately half of the allocated sites are coincident with, or are located in close proximity to, archaeological features identified by Berkshire Archaeology[91]. Where archaeological features have been identified, there is greater potential for further, undiscovered archaeological features to also be present in the area. Development in these

[91] Heritage Gateway (2018) Berkshire Archaeology. Available at: https://www.heritagegateway.org.uk/gateway/chr/herdetail.aspx?crit=&ctid=97&id=4769 [Date Accessed: 01/10/19]

Box 10.1: Summary of identified impacts on cultural heritage

locations could potentially result in damage of discovered or undiscovered archaeological features.

10.3 Local Plan mitigation

10.3.1 The BLPSV-PC considers cultural heritage of the Plan area closely, particularly in the historic town of Windsor. Policies HE1 and HE2 seek to conserve and enhance the historic environment in proportion to the significance of the asset. Particular emphasis is given to Windsor Castle and Windsor Great Park. All policies and proformas which are anticipated to help protect and enhance the historic environment are listed in **Box 10.2** below.

***Box 10.2:** Local Plan policy/ proforma mitigation for identified impacts on cultural heritage*

Cultural Heritage impacts 1-5: Local Plan policy/ proforma mitigation which could help avoid or reduce alterations to the character and/ or setting of heritage assets (including Scheduled Monuments, Registered Parks and Gardens, Listed Buildings, Conservation Areas and archaeological features); see Box 10.1.

Policy HE1 – Historic Environment

Under this policy, any proposed development which could potentially cause harm to the significance of a designated or non-designated heritage assets or their settings would not be supported. This policy states that *"development proposals should seek to conserve and enhance the character, appearance and function of heritage assets"*, and requires development which would directly affect heritage assets to be accompanied by a heritage statement or archaeological assessment

Policy HE2 – Windsor Castle and Great Park

This policy would be expected to ensure that views of Windsor Castle and Windsor Great Park are conserved or improved, which would benefit the historic character of Windsor and enhance the attractiveness of the surrounding area and sense of place.

Policy SP1 – Spatial Strategy for the Royal Borough of Windsor and Maidenhead

This policy limits growth within Windsor, aiming to protect and conserve heritage assets and to "*enhance the quality of the built environment"*.

Policy QP1 – Sustainability and Placemaking

This policy requires larger developments to *"conserve and enhance the Borough's rich historic environment"*.

Policy QP3 – Character and Design of New Development

Good design would help to ensure that new development does not have an adverse impact on surrounding heritage assets. This policy requires development to respect and enhance the

historic character, as well as to seek opportunities for retaining and improving important local views of heritage assets.

Policy QP3a - Building Height and Tall Buildings

This policy aims to ensure that building height is sympathetic to the local area, which would be expected to ensure that development proposals have regard to any local heritage assets, built form, as well as the topography.

Policy QP4 – River Thames Corridor

This policy seeks to protect heritage assets, including *"buildings, structures, bridges [and] archaeological remains that are associated with the Thames and its history and heritage"*.

Policy TR2 – Windsor Town Centre

This policy aims to ensure development is appropriate to the local character, enhances vitality and viability, and seeks to retain important frontages.

Policy VT1 – Visitor Development

This policy aims to ensure development *"contribute[s] positively to the character of the area"*, including rejuvenation of the town centres, where possible. This policy also seeks to ensure that development is well related to its surroundings, whether in rural or more urbanised areas, including the *"retention and enhancement of heritage assets".*

Site Proformas AL1, AL2, AL4 and AL7

Proformas for Sites AL1, AL2, AL4, AL7 require development proposals to *"respond positively and sensitively to the character and scale of heritage assets in the surrounding area"*.

Site Proformas AL5, AL9, AL11, AL14, AL16, AL17, AL18, AL19, AL22, AL26, AL29, AL30, AL32, AL33, AL34, AL36 and AL37

These site proformas seek to ensure development proposals are built of *"high quality design which supports the character of the area".*

Site Proformas AL4, AL8, AL9, AL23, AL24, AL29, AL31, AL32, AL35 and AL40

These site proformas aim to ensure that development proposals *"conserve and enhance the setting"* of nearby Conservation Areas/Listed Buildings/Park and Gardens.

Site Proformas AL6, AL31 and AL35

Site proformas AL6 and AL35 state that development proposals should *"provide a Heritage Management Plan"*, and site proforma AL31 states that development proposals should *"be based on a Heritage Assessment (agreed with the Local Planning Authority) of the listed buildings on and near the site and their setting".*

Site Proformas AL5 and AL6

These two site proformas aim to ensure that development proposals within these two locations retain heritage assets on the sites 'United Reformed Church' and 'Maidenhead Town Centre Conservation Area' respectively.

Site Proformas AL16, AL17, AL18, AL29 and AL39

These proformas seek to ensure that future development at these five sites consider long-distance views, and therefore, help protect the local historic environment and the setting of nearby heritage assets.

10.4 Residual effects on cultural heritage

10.4.1 The BLPSV-PC policies and site proformas seek to mitigate potential adverse impacts on heritage assets due to the proposed development. This is discussed in **Box 10.3**.

Box 10.3: *Residual effects and recommendations for cultural heritage*

Residual effects	Further details of the residual effect
Alter character and/ or setting of heritage assets	Policy HE1 aims to ensure that development proposals which could potentially harm a heritage would not be supported, and development proposals located in close proximity to heritage assets should prepare a heritage statement. Although the policies and site proformas would ensure development proposals do not result in harm to a heritage asset, it is uncertain if the BLPSV-PC would result in positive impacts towards locally heritage assets. Therefore, the BLPSV-PC would be expected to result in a residual negligible effect on the historic environment.

11 Human health

11.1 Baseline

11.1.1 In order to facilitate good health and wellbeing of a sustainable community, it is necessary for residents to have good access to GP surgeries, NHS hospitals, leisure centres, recreation facilities, greenspaces and natural habitats.

11.1.2 The health of residents in Windsor and Maidenhead[92] is generally better than the England average. The borough does not contain Lower Super Output Areas[93] that are ranked within the top 10% most deprived areas nationally in terms of their Indices of Multiple Deprivation[94,95].

11.1.3 Priorities for health in the Plan area are outlined in Buckinghamshire's Joint Strategic Needs Assessment[96]. Priority concerns for healthy lifestyles include weight, exercise, substance misuse and sexual health. Priorities are set out for children, young adults, families, adults and the elderly, with mental health a priority concern for each.

[92] Public Health England (2018) Windsor and Maidenhead: Local Authority Health Profile. Available at: https://fingertips.phe.org.uk/profile/health-profiles/data#page/1/gid/1938132696/pat/6/par/E12000008/ati/102/are/E06000040 [Date Accessed: 30/09/19]

[93] A Lower Super Output Area is a geographic area designed to improve the reporting of small area statistics in England and Wales. LSOAs are defined by the Office for National Statistics as containing between 1,000 and 3,000 people, and between 400 to 1,200 households.

[94] The English Indices of Deprivation 2015 (also known as the Index of Multiple Deprivation, or IMD) is a nationally recognised measure of deprivation at the Lower Super Output Area.

[95] English Indices of Deprivation 2015 - Summaries at Local Authority Level. https://data.gov.uk/dataset/e86eab0e-4c31-46b4-b034-064a3cf7f46d/english-indices-of-deprivation-2015-summaries-at-local-authority-level [Date accessed: 30/09/19].

[96] Buckinghamshire County Council (2017) Joint Strategic Needs Assessment. Available at: http://www.healthandwellbeingbucks.org/what-is-the-jsna [Date Accessed: 30/09/19]

11.1.4 As discussed in detail in **Chapter 6**, air pollution is a significant concern internationally, nationally and locally, with 5.1% of mortality in England and 5.8% of mortality in Windsor and Maidenhead being attributable to particulate air pollution[97]. It is assumed that the impacts of road transport associated air pollution primarily occur within 200m of source [98]. Residents within 200m of a road may therefore expect to have their health adversely impacted by road transport associated air pollution to some extent, in addition to the potential impacts of road transport associated noise and light pollution. AQMAs have been designated to manage local air quality in areas where National Air Quality Objectives are unlikely to be achieved.

11.1.5 The issue of health is dealt with under SA Objective 12 'Health'. Indicators for the objective include the proximity and access to GP surgeries, NHS hospitals and natural greenspaces.

11.2 Impacts on human health

11.2.1 **Box 11.1** presents a plan-wide summary of the adverse impacts on human health that have been identified through the SA process. These adverse impacts are those identified prior to mitigation considerations. **Box 11.2** lists the policies and site proforma information within the BLPSV-PC which would be likely to mitigate, either fully or partially, some of the identified adverse impacts on human health. Where mitigating policies or proformas are silent, or the contents of the BLPSV-PC only partially mitigates the adverse impacts, a residual adverse effect is identified. **Box 11.3** explores the nature of these residual effect and, where applicable, provides further recommendations for mitigation or enhancement.

[97] Public Health Outcomes (2017) Fraction of mortality attributable to particulate air pollution. Available at: https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/4/gid/1000043/pat/6/par/E12000008/ati/102/are/E06000040/iid/30101/age/230/sex/4 [Date Accessed: 30/09/19]

[98] The Highways Agency, Transport Scotland, Welsh Assembly Government and The Department for Regional Development Northern Ireland (2007) Design Manual for Roads and Bridges, Volume 11, Section 3, Part 1 HA207/07 Air Quality. Available at: http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section3.htm [Date Accessed: 30/09/19]

***Box 11.1:** Summary of identified impacts on human health*	
1	**Reduction local air quality with implications for human health** Due to the proposed development of 14,240 dwellings within the Plan area under the BLPSV-PC, it would be likely that air quality within the borough would be adversely impacted by this quantum of development. impacts would be likely to be greatest where new development increases local congestion. The long-term health of residents, in particular vulnerable groups including children and the elderly, would be likely to be adversely impacted by local reductions in air quality. This impact is considered in detail in **Chapter 7**.
2	**Reduced accessibility to NHS hospitals and GP surgeries** Thirteen of the site allocations are located outside of the sustainable distance to an NHS hospital or a GP surgery. In such cases, it may be difficult for residents to reach essential heath care services, which could potentially have detrimental impacts on human health.
3	**Access to leisure centres and encouraging healthy lifestyles** Thirteen of the site allocations are located outside of the sustainable distance to a leisure centre. Local residents with limited access to these facilities could potentially be discouraged from living active and healthy lifestyles, which could potentially have adverse impacts on mental wellbeing as well as physical health. Good access to green spaces and travelling via walking and cycling are known to have physical and mental health benefits.
4	**Improved community cohesion** Community cohesion is important to help ensure residents are living happy and healthy lifestyles. Interactive and vibrant communities often benefit from a strong sense of place, a reduced fear of crime and have economic benefits.

11.3 Local Plan mitigation

11.3.1 Several policies and site proformas aim to promote healthy and active lifestyles for new and existing residents within the Plan area. Many of these policies and proformas would be expected to result in benefits to human health, through the provision of open spaces, improvements to walking and cycling networks and improved sustainable transport to healthcare facilities. Reductions in air quality which would be expected following the proposed development of 14,240 dwellings would not be expected to be fully mitigated through BLPSV-PC policies or proformas. All mitigation is discussed further in **Box 11.2** below.

Box 11.2: *Local Plan policy/ proforma mitigation for identified impacts on human health*

	**Health impact 1: Local Plan policy/ proforma mitigation which could help avoid or reduce degradation of local air quality with implications for human health (see impact 1, Box 11.1)**

Policy SP1 – Spatial Strategy for the Royal Borough of Windsor and Maidenhead

This policy would be expected to help reduce personal car use across the borough, and subsequently help reduce the volume of traffic related emissions which could potentially be harmful to human and ecosystem health.

Policy SP2 – Climate Change

Enhanced green infrastructure alongside amenity areas, buildings and streets could potentially help to promote natural air filtration, and as such reduce residents' exposure to air pollution associated with traffic.

Policy QP2 – Green and Blue Infrastructure

Increased vegetation would be expected to contribute towards improved air quality due to the increased uptake of carbon dioxide and filtration of pollutants associated with road transport, which could potentially help to reduce residents' exposure to air pollution.

Policy QP3 – Character and Design of New Development

This policy would be likely to help to ensure residents are not exposed to unacceptable levels of air or noise pollution, and that development *"has no unacceptable effect on the amenities enjoyed by the occupants of adjoining properties in terms of privacy, light, disturbance, vibration, pollution, dust, smell and access to sunlight and daylight".*

Policy NR2 – Nature Conservation & Biodiversity

This policy would be likely to increase vegetation and promote habitat connectivity across the Plan area, and as such help to introduce greater resilience to climate change into the ecosystem. Enhancing the natural environment would be expected to provide increased carbon storage capacity and natural filtration of pollutants.

Policy NR3 – Trees, Woodlands and Hedgerows

The retention and enhancement of trees and woodland supported under this policy would be likely to enhance the natural carbon sink and air filtration ecosystem services provided by trees and vegetation. This could also potentially help to provide natural filtration to reduce residents' exposure to air pollution.

Policy EP1 – Environmental Protection

This policy would be expected to ensure new development is situated in appropriate locations to minimise the risk of exposure of new or existing residents to pollution or contamination issues.

Policy EP2 – Air Pollution

This policy aims to ensure that new developments do not result in significant increases in air pollution, and in particular ensure that air quality within or adjacent to AQMAs is not worsened. This policy provides details on appropriate mitigation measures which could be implemented to help combat issues in regard to air pollution. In accordance with this policy, no new residents will be exposed to unacceptably high levels of air pollution.

Policy IF2 – Sustainable Transport

By promoting sustainable transport options under this policy, it would be anticipated that there would be a reduction of vehicle-related air pollution within the borough. The policy also aims to reduce traffic flows, which would be likely to reduce localised air pollution.

Policy IF4 – Open Space

Potential new or enhanced open spaces under this policy, including green infrastructure, would be expected to contribute towards improved air quality due to the increased uptake of carbon dioxide and filtering of particulates.

Site Proformas AL5, AL7, AL9, AL11, AL19, AL30, AL32, AL36 and AL39

These proformas seek to ensure development proposals *"provide appropriate mitigation measures to address the impacts of noise and air quality"* from nearby roads.

Site Proformas AL15, AL27 and AL28

These site proformas are for Strategic Green Infrastructure allocations, including 'wildlife zones' and habitat areas. This would be likely to have benefits in terms of filtering pollutants.

Site Proforma AL6

This proforma aims to ensure development proposals *"focus residential units away from Castle Hill and Frascati Way to mitigate noise and air quality impacts arising from traffic".*

Site Proforma AL12

This proforma aims to ensure development proposals are *"designed sensitively to mitigate air and noise pollution".*

Site Proforma AL14

This proformas seeks to ensure development proposals *"provide appropriate mitigation measures to address any impacts of the site in terms of noise, pollution and air quality on adjoining residential areas".*

Site Proforma AL23

Development proposals at Site AL23 should *"provide appropriate mitigation measures to address the impact of air quality so as to protect residential amenity".*

Site Proforma AL29

Development proposals at Site AL29 should *"integrate green and blue infrastructure at all levels throughout the site, with priority on Victoria Street and William Street frontages in order to mitigate air and noise pollution".*

Site Proforma AL31

Development proposals under this proforma should *"address the impacts of noise, vibrations and air quality arising from traffic and the adjoining NHS hospital uses in order to protect residential amenity".*

Site Proforma AL40

This site proforma aims to *"address the impacts of noise and air quality from Heathrow Airport".*

Health impact 2: Local Plan policy/ proforma mitigation which could help avoid or reduce impacts on accessibility to NHS hospitals, GP surgeries and leisure centres degradation of local air quality with implications for human health (see impact 2, Box 11.1)

Policy SP1 – Spatial Strategy for the Royal Borough of Windsor and Maidenhead

Development within existing centres would be expected to provide good accessibility to social infrastructure such as healthcare facilities.

Policy QP1 – Sustainability and Placemaking

This policy aims to ensure that larger developments *"contribute to the provision of social, transport and utility infrastructure"* and aims to encourage walking and cycling. This would be likely to improve access to healthcare facilities in the borough.

Policy QP3 – Character and Design of New Development

Under this policy, well-connected layouts would be provided. This includes pedestrian and cycling routes, which would be expected to provide alternative sustainable modes of transport, improving access to local healthcare facilities.

Policy HO1 – Housing Development Sites

Under this policy, new development proposals for housing sites would be located in close proximity to existing centres. This would be expected to ensure that residents have good access to local services and facilities, including healthcare facilities.

Policy HO4 – Gypsies and Travellers

This policy aims to ensure that traveller accommodation is situated in sustainable locations, with good access via *"sustainable modes of transport to a settlement with health care, retail, and school facilities with capacity".*

Policy TR1 – Hierarchy of Centres

This policy aims to support and strengthen centres. This would be expected to provide benefits in terms of residents' access to local healthcare facilities.

Policy EP2 – Air Pollution

This policy would be expected to encourage the use of sustainable transport methods and help improve access to healthcare facilities.

Policy IF1 – Infrastructure and Developer Contributions

Suitable supporting infrastructure would be provided under this policy, through on-site provision or funding including via the Community Infrastructure Levy (CIL). This would be expected to include a range of infrastructure including leisure and healthcare facilities.

Policy IF5 – Rights of Way and Access to the Countryside

This policy would be expected to improve local accessibility via walking or cycling to local services and facilities, including *"local schools, shops, stations and other community facilities".*

Site Proformas AL22, AL25, AL26 and AL27

These four site proformas seek to improve public transport to improve access to facilities *"including to nearby GP surgeries".*

Site Proforma AL22, AL26, AL36 and AL37

These four site proformas seek to improve public transport to improve access to facilities *"including to nearby … leisure facilities".*

Site Proforma AL13

The site proforma aims to ensure development proposals *"provide a range of services and facilities within the Local Centre including … leisure, community facilities, … health".*

Site Proforma AL15

This site proforma seeks to ensure development proposals incorporate the *"provision of a range of sporting facilities (indoor and outdoor) to create a high-quality strategic sporting hub for Maidenhead. This will include a leisure centre to replace the Magnet Leisure Centre which is to be decommissioned".*

Site Proforma AL9

This proforma helps to ensure that the development proposal is constructed in phases, to ensure the Magnet Leisure Centre is retained until the new facilities at Braywick Park are open.

Site Proformas AL29, AL35 and AL36

These three proformas help to ensure that public transport improvements are incorporated into development proposals.

Health impact 3: Local Plan policy/ proforma mitigation which could help avoid or reduce impacts that restrict the encouragement of active and healthy lifestyles (see impact 3, Box 11.1)

Policy SP2 – Climate Change

Enhanced green infrastructure alongside amenity areas, buildings and streets could potentially help provide a more attractive local area and encourage walkable neighbourhoods.

Policy QP1 – Sustainability and Placemaking

This policy aims to ensure larger developments *"foster biodiversity and enhance green infrastructure"*, which would be expected to have benefits in terms of physical and mental wellbeing.

Policy QP2 – Green and Blue Infrastructure

This policy requires all development to provide green and blue infrastructure, and states that *"all forms of development will be expected to incorporate innovative, exemplar quality green and blue infrastructure at both ground floor and upper levels".* This would be likely to have positive impact on residents' wellbeing through providing increased access to a diverse range of natural habitats.

Policy QP3 – Character and Design of New Development

Under this policy, well-connected layouts would be provided. This includes pedestrian and cycling routes, which would be expected to encourage physical exercise. The policy also aims to protect trees and vegetation and include comprehensive green infrastructure, which would be expected to benefit mental health.

Policy QP4 – River Thames Corridor

The conservation and enhancement of the River Thames corridor would be likely to provide space for physical exercise and have benefits for mental wellbeing.

Policy TR1 – Hierarchy of Centres

This policy aims to support and strengthen centres. This would be expected to increase the provision of facilities located in close proximity to dwellings, and therefore, encourage access to these facilities via walking or cycling.

Policy NR2 – Nature Conservation & Biodiversity

This policy would be likely to result in benefits to local residents, through improving access to natural outdoor spaces, encouraging physical activity and having benefits for mental wellbeing

Policy NR3 – Trees, Woodlands and Hedgerows

The retention and enhancement of trees and woodland supported under this policy would be likely to result in mental health benefits to local residents.

Policy NR4 – Thames Basin Heaths Special Protection Area

This policy also requires the creation of bespoke SANGs as part of some new developments, which could potentially provide outdoor space with benefits to physical and mental health of residents.

Policy IF2 – Sustainable Transport

This policy encourages travel via walking or cycling, which would be expected to facilitate active and healthy lifestyles.

Policy IF3 – Local Green Space

This policy aims to protect designated Local Green Spaces, which are known to have benefits to physical and mental human health.

Policy IF4 – Open Space

By preserving and enhancing open spaces, this policy would be likely to help ensure new residents have good access to natural and open spaces, providing opportunities for recreation and leisure, including play facilities for children.

Policy IF5 – Rights of Way and Access to the Countryside

The improvement of the local PRoW and cycle network promoted within this policy would help to encourage a healthy lifestyle and travel via walking or cycling rather than personal car use.

Site Proformas AL1, AL2, AL3, AL4, AL5, AL7, AL8, AL9, AL10, AL12, AL13, AL14, AL15, AL16, AL17, AL18, AL19, AL20, AL21, AL22, AL23, AL24, AL25, AL27, AL28, AL29, AL30, AL31, AL33, AL34, AL35, AL36, AL37, AL38, AL39 and AL40

The majority of the site proformas set out requirements for the provision of pedestrian and/or cycle access, which would be expected to help encourage residents to live active lifestyles.

Site Proforma AL25

This site proforma sets out the requirement for development proposals to ensure *"improved connectivity to the PRoW network and adjoining green infrastructure site".*

All Site Proformas

All of the site proformas require development proposals to include green infrastructure, which would be likely to help encourage residents to access to open spaces and live active lifestyles.

Site Proforma AL15

This site proforma sets out the provision of a sports hub, public park and games area, with benefits for physical and mental health.

Site Proformas AL13, AL24 and AL28

These three site proformas include the provision of sports pitches, which would help to encourage physical activity.

Health impact 4: Local Plan policy/ proforma mitigation which could help avoid or reduce impacts that restrict community cohesion (see impact 4, Box 11.1)

Policy SP2 – Climate Change

This policy seeks to ensure that *"future communities can live, work, rest and play in a comfortable and secure environment".*

Policy HO2 – Housing Mix and Type

This policy supports the development of specialist accommodation for elderly people as well as community-led housing approaches.

Policy HO3 – Affordable Housing

This policy requires *"all development for 10 dwellings gross, or more than 1,000 sqm of residential floorspace, to provide on-site affordable housing"*, which would be expected to ensure that a suitable mix and tenure of residential development is provided to meet the needs of the population.

Policy TR6 – Strengthening the Role of Centres

This policy aims to strengthen the role of centres within the borough, which could potentially provide additional shopping locations as well as local employment opportunities. Edge of centre locations would be considered appropriate providing they are well-connected and accessible to residents and employees.

Policy TR8 – Markets

Markets would be expected to provide opportunities for local shopping, employment and community events.

Policy HE2 – Windsor Castle and Great Park

Protecting Windsor Castle and Windsor Great Park would be expected to have benefits to the sense of community and help to promote tourism in the local area.

Policy NR2 – Nature Conservation & Biodiversity

This policy would be likely to result in benefits to local residents, through improving access to natural outdoor spaces, providing opportunities for community cohesion.

Policy NR4 – Thames Basin Heaths Special Protection Area

This policy also requires the creation of bespoke SANGs as part of some new developments, and measures to ensure the continued provision of SANGs to meet future needs throughout the Plan period. This would be expected to provide opportunities to facilitate interactive communities.

Policy IF6 – Community Facilities

This policy would be expected to ensure that existing local services are retained, maintained and enhanced, which would be likely to improve local residents' access to essential services, providing benefits to the local community.

Policy IF7 – Utilities

With improvements to telecommunications in the area under this policy, residents would have a greater opportunity to access essential services from home.

Site Proformas AL1, AL3, AL4, AL5, AL6, AL9, AL13, AL16, AL21, AL24 and AL26

These site proformas include provisions for community facilities, which would be expected to have benefits to the local community.

11.4 Residual effects on human health

11.4.1 Residual adverse effects are those that remain after the application of the mitigating policies and proformas within the BLPSV-PC. Many of the policies and proformas would be expected to mitigate and result in positive impacts in relations to community cohesion, healthy lifestyle and access to healthcare facilities. The residual adverse effect which remains relates to the reduction in air quality, with implications for human health. This, and residual positive effects of the BLPSV-PC on human health, are discussed further in **Box 11.3** below.

Box 11.3: *Residual effects and recommendations for human health*

Residual effects	Further details of the residual effect
Reduction in local air quality with implication for human health	The introduction of 33,606 new residents under the BLPSV-PC would be expected to increase vehicle emissions in the Plan area, with adverse implications for human health, in particular, increasing the risk of respiratory diseases. The policies and site proformas outlined in **Box 7.2** would be expected to reduce the likelihood of adverse impact occurring and could potentially help reduce these adverse impacts. However, due to the volume of development proposed, an increase in traffic flows and subsequent reduction of air quality would be expected to have residual adverse effects on human health.

Residual effects	Further details of the residual effect
	Over time, advances in technologies would be expected to help reduce the volume of pollutant released into the atmosphere from vehicles. This may be in the form of increased uptake of electric vehicle use or promoting the use of sustainable transport options rather than personal car use. Advances in legislation, policy and behavioural changes would also be expected to improve local air quality. Strategies implemented through the Local Transport Plan[99] and AQMA Air Quality Action Plan[100] would complement BLPSV-PC policies. The Clean Air Strategy[101] also sets out strategies to reduce emissions. Together, this would be expected to target specific mitigation and reduce air pollution due to development, to some extent. A reduction in air quality in the borough would be expected to be a long-term but reversible impact. **Recommendations:** It is recommended that traffic flows are monitored on main roads within the borough. This would help indicate any potential harmful reductions in air quality due to increases in vehicular emissions.
Reduced accessibility to NHS hospitals, GP surgeries and leisure centres	Many of the development proposals within the BLPSV-PC would locate new residents in close proximity to healthcare facilities. For the new residents which would be located outside a sustainable distance to a healthcare facility, policies and site proforma information within the BLPSV-PC would be anticipated to improve residents' accessibility to healthcare facilities via sustainable transport options, including frequent bus services and improved pedestrian and cycle networks.
Encouraging active and healthy lifestyles	The BLPSV-PC contains numerous policies and site proformas which aim to improve the local pedestrian and cycle networks, to encourage residents to reduce reliance on personal car use. This would be expected to encourage residents to participate in physical exercise. The increased provision of open space and green infrastructure within the borough would be expected to help facilitate healthy and active lifestyles. This would be expected to increase residents' access to outdoor space for physical exercise, as well as access to natural habitats, which are known to have mental health and wellbeing benefits.
Community Cohesion	The site allocations and policies within the BLPSV-PC would be likely to increase the provision of community facilities within the Plan area. This would be expected to help facilitate vibrant and interactive communities, and lead to a greater sense of place within settlements. In turn, this would be likely to have benefits to the local economy.

[99] RBWM Council (2012) Local Transport Plan 2012 – 2026. Available at: https://www3.rbwm.gov.uk/downloads/download/90/local_transport_plan_documents [Date Accessed: 11/10/19]

[100] RBWM Council (2015) Air Quality Action Plan – update for The Royal Borough of Windsor and Maidenhead. Available at: https://www3.rbwm.gov.uk/downloads/download/358/air_quality [Date Accessed: 11/10/19]

[101] DEFRA (2019) Clean Air Strategy 2019. Available at: https://www.gov.uk/government/publications/clean-air-strategy-2019 [Date Accessed: 11/10/19]

12 Landscape

12.1 Baseline

12.1.1 Landscape is described as comprising natural, cultural, social, aesthetic and perceptual elements. This includes flora, fauna, soils, land use, settlement, sight, smells and sound[102]. The Plan area is predominantly rural in character, with some larger settlements and urbanising influences.

12.1.2 The Chiltern Hills AONB, a nationally protected landscape, is located to the north west of the borough. The Chilterns AONB extends to 324 square miles of countryside, stretching from the River Thames in southern Oxfordshire up through Buckinghamshire and Bedfordshire to Hitchin in Hertfordshire. It is one of 38 AONBs in England and Wales, which belong to the same family as National Parks. Its designation as an AONB in 1965 recognised that the Chiltern Hills contain some of the finest landscapes in the country which are worthy of protection at the highest level. Although any proposed development within the borough would not coincide with this nationally designated landscape, development could potentially result in long-term adverse impacts on the setting of this AONB.

12.1.3 No local landscape designations have been identified, instead a landscape character approach has been taken. The Landscape Character Assessment of the borough[103] suggests that the pressure for housing development is a key issue with regards to protecting the landscape. The LCA records the borough as having 32 different landscape areas. The degree to which these areas are sensitive and have a capacity for change varies.

12.1.4 There are no National, Regional or County Parks within the Plan area. The Thames Path National Trail passes through the borough to the south east and follows the borough's northern boundary.

[102] Natural England (2014) An Approach to Landscape Character Assessment. Available at: https://www.gov.uk/government/publications/landscape-character-assessments-identify-and-describe-landscape-types [Date Accessed: 13/03/19]

[103] LDA Design (2004) Landscape Character Assessment for the Royal Borough of Windsor and Maidenhead. Available at: http://consult.rbwm.gov.uk/file/4861318 [Date Accessed: 30/09/19]

12.1.5 The issue of landscape was considered under SA Objective 5 'Landscape quality', which aims to conserve, enhance and manage the character and appearance of the landscape and townscape whilst maintaining and strengthening its distinctiveness.

12.2 Impacts on landscape

12.2.1 **Box 12.1** presents a plan-wide summary of the adverse impacts on landscape that have been identified through the SA process. These adverse impacts are those identified prior to mitigation considerations. **Box 12.2** lists the policies and site proforma information within the BLPSV-PC which would be likely to mitigate, either fully or partially, some of the identified adverse impacts on landscape. Where mitigating policies or proformas are silent, or the contents of the BLPSV-PC only partially mitigates the adverse impacts, a residual adverse effect is identified. **Box 12.3** explores the nature of these residual effects and, where applicable, provides further recommendations for mitigation or enhancement.

***Box 12.1:** Summary of identified impacts on landscape*	
1	**Alteration of the landscape character** Development proposals within the BLPSV-PC could potentially result in the loss of 'sense of place' and have adverse impacts in the landscape character of the sites and their surroundings. The introduction of built form which does not compliment and respect the local distinctive character of existing landscapes and settlements would be likely to result in adverse impacts on the local landscape character. Some development proposals could potentially result in the loss of locally important landscape features, such as trees, hedgerows and walls.
2	**Alteration of views** Some development proposals within the BLPSV-PC could potentially adversely impact views experienced towards or from sensitive landscape and locations such as the River Thames National Trail. Views experienced from users of the local Public Right of Way (PRoW) network and from local residential properties could also be altered following the proposed development within the BLPSV-PC.
3	**Increase in urban sprawl** Twelve site allocations within the BLPSV-PC are located on previously undeveloped land. The proposed development at these sites would be likely to result in the urbanisation of the countryside, with settlement boundaries extending into the open countryside of RBWM.

Box 12.1: *Summary of identified impacts on landscape*	
	This urban sprawl could potentially have adverse impacts on the landscape character of the borough.
4	**Loss of tranquillity** Tranquillity is considered to be a significant asset of landscape. Common themes in regard to tranquillity include the association with nature and access to the countryside. Increased light pollution and consequently impacts on Dark Skies[104] may arise as a consequence of the development proposed in the Plan. Darkness at night is one of the key characteristics of rural areas and it represents a major difference between what is rural and what is urban. Reductions in tranquillity are likely as a result of some development proposals. The introduction of both noise and night time lighting is likely to reduce tranquillity at these locations.

12.3 Local Plan mitigation

12.3.1 The BLPSV-PC focuses development within urban areas and on previously developed land. However, to meet the identified housing requirements, a proportion of growth within the Plan is located on previously undeveloped land. This includes land formerly included in the Metropolitan Green Belt.

12.3.2 Policies and site proformas within the BLPSV-PC aim to protect and, where appropriate, enhance the local character and distinctiveness of landscape in the Plan area. These policies and proformas are discussed in **Box 12.2**.

Box 12.2: *Local Plan policy/ proforma mitigation for identified landscape impacts*

	**Landscape impact 1: Local Plan policy/ proforma mitigation which could help avoid or reduce impacts that alter landscape character (see impact 1, Box 12.1)**
Policy SP1 – Spatial Strategy for the Royal Borough of Windsor and Maidenhead This policy limits growth within Windsor, aiming to *"enhance the quality of the built environment"*.	
Policy SP2 – Climate Change Through the *"use of trees and other planting, where appropriate as part of a landscape scheme"* and encouraging the use of green and brown roofs and walls, including use of native plants, this policy could potentially help to enhance landscape character in the local area.	

[104] Campaign to Protect Rural England (no date) NightBlight: Reclaiming our dark skies. Available at: https://www.nightblight.cpre.org.uk/?gclid=Cj0KCQjwn8_mBRCLARIsAKxi0GKSp3OwhEredoviY2C0BQZyTOSCw_AHFipqf8-mqcXSnrCREne3FYgaAhdVEALw_wcB [Date Accessed: 01/10/19]

Policy QP1 – Sustainability and Placemaking

This policy states that development proposals must *"positively contribute towards the places in which they are located"* and be designed to create *"attractive public spaces".*

Policy QP2 – Green and Blue Infrastructure

The conservation and enhancement of the green and blue infrastructure networks could potentially provide opportunities to retain and improve the character and appearance of the local landscape and townscape.

Policy QP3 – Character and Design of New Development

This policy would be likely to help integrate new development into the surrounding landscape and townscape through the requirement for new development to *"respect and enhance the local, natural or historic character of the environment".* In addition, the policy ensures new development *"retains important local views of historic buildings or features and makes the most of opportunities to improve views wherever possible"* and "*respects and retains existing high-quality townscapes and landscapes and helps create attractive new skylines, townscapes and landscapes".*

Policy QP4 – River Thames Corridor

This policy would help to ensure all new developments are in-keeping with the landscape character surrounding the River Thames.

Policy VT1 – Visitor Development

This policy aims to ensure development *"contribute[s] positively to the character of the area"*, including rejuvenation of the town centres where possible.

Policy HE2 – Windsor Castle and Great Park

This policy would be expected to ensure that views of Windsor Castle and Windsor Great Park are conserved or improved, which would benefit the historic character of Windsor and enhance the attractiveness of the surrounding area and sense of place.

Policy NR1 – Managing Flood Risk and Waterways

This policy would be expected to help enhance the local landscape character through incorporation of green spaces amongst new development

Policy NR2 – Nature Conservation & Biodiversity

Enhanced green infrastructure which would be expected under this policy, would be expected to contribute positively towards the character and attractiveness of the landscape.

Policy EP1 – Environmental Protection

The policy would be likely to help ensure that new development does not result in adverse impacts on the surrounding environment and seeks opportunities to improve the quality of the local landscape during design and operation.

Site Proformas AL5, AL9, AL11, AL14, AL16, AL17, AL18, AL19, AL22, AL26, AL29, AL30, AL32, AL33, AL34, AL36 and AL37

These site proformas aim to ensure that development proposals are of *"high quality design which supports the character of the area"* which would be likely to help protect the local landscape character.

Site Proformas AL17, AL21 and AL26

These three site proformas aim to ensure development proposals *"provide a series of high-quality character areas across the site each with its own identity".*

Landscape impact 2: Local Plan policy/ proforma mitigation which could help avoid or reduce impacts that alter views (see impact 2, Box 12.1)

Policy QP2 – Green and Blue Infrastructure

The conservation and enhancement of the green and blue infrastructure networks could potentially be used as a tool for screening new development proposals from nearby sensitive receptors, including National Trails and local residents.

Policy QP3 – Character and Design of New Development

This policy requires new development to provide *"high quality soft and hard landscaping where appropriate"* which would be expected to mitigate adverse impacts associated with the alteration of surrounding views.

Policy QP3a - Building Height and Tall Buildings

This policy aims to ensure that building height is sympathetic to the local area, which would be expected to ensure that development proposals have regard to any local built form and ensure development height does not substantially alter views experienced from sensitive receptors.

Policy QP4 – River Thames Corridor

This policy aims to preserve, and where possible enhance, important views of the River Thames.

Policy NR3 – Trees, Woodlands and Hedgerows

Trees, woodlands and hedgerows are used as a useful tool to help integrate new development into the existing landscape, for example in terms of protecting or enhancing views, or providing visual interest.

Site Proformas AL6, AL13, AL14, AL15, AL16, AL17, AL18, AL19, AL25, AL26, AL27, AL29, AL30, AL33, AL35, AL37 and AL39

These site proformas seek to ensure that development proposals consider and/ or retain important views surrounding the sites.

Site Proforma AL21

The site proforma aims to ensure future developments *"retain the hidden nature of the site in the landscape".*

Landscape impact 3: Local Plan policy/ proforma mitigation which could help avoid or reduce increased urban sprawl (see impact 3, Box 12.1)

Policy QP3 – Character and Design of New Development

This policy would be likely to help integrate new development into the surrounding landscape and townscape through the requirement for new development to *"respect and enhance the local, natural or historic character of the environment"* and ensures that new development "*respects and retains existing high-quality townscapes and landscapes and helps create attractive new skylines, townscapes and landscapes".* This could potentially help mitigate the adverse impacts of urbanisation into the surrounding countryside.

Policy QP5 – Green Belt

This policy seeks to ensure that development proposals are located in areas which preserve the openness of the land and are appropriate to their surroundings.

Site Proformas AL21, AL23, AL24, AL25, AL37 and AL38

These site proformas set out the requirement for development proposals to have *"appropriate edge treatment and transition to the countryside",* which would be expected to reduce the risk of urban sprawl into the countryside.

Site Proforma AL13

This site proforma ensures that development proposals *"retain and reinforce the tree landscape buffers to the A404(M) and A308(M) and along all of the site boundaries to maintain the sense of a leafy enclosure and setting to the development".*

Landscape impact 4: Local Plan policy/ proforma mitigation which could help avoid or reduce loss of tranquillity (see impact 4, Box 12.1)

Policy QP2 – Green and Blue Infrastructure

The conservation and enhancement of the green and blue infrastructure networks could potentially provide opportunities to prevent the loss of tranquillity across the Plan area.

Policy QP3 – Character and Design of New Development

This policy helps to ensure that new development *"respects and enhances the local, natural or historic character of the environment, paying particular regard to urban grain, layouts, rhythm, density, height, skylines, scale, bulk, massing, proportions, trees, biodiversity, water features, enclosure and materials"* which would be expected to help prevent the loss of tranquillity in the Plan area.

Policy EP1 – Environmental Protection

The policy aims to ensure that *"residential amenity should not be harmed by reason of noise, smell or other nuisance".*

Site Proformas AL8, AL12, AL15, AL24 and AL28

These five site proformas aim to ensure development proposals consider lighting to reduce adverse impacts to local tranquillity.

Site Proformas AL4, AL5, AL6, AL7, AL9, AL10, AL11, AL12, AL14, AL15, AL18, AL19, AL20, AL21, AL22, AL25, AL26, AL29, AL30, AL31, AL32, AL36, AL37, AL39 and AL40

These proformas aim to ensure development proposals are considerate to potential adverse impacts of noise which may occur during the construction and occupation of developments.

All Site Proformas

All of the site proformas set out requirements to retain the local ecological network and the provisions of green infrastructure which would be likely to help retain tranquillity across the Plan area.

12.4 Residual effects on landscape

12.4.1 The BLPSV-PC sets out numerous policies and information within site proformas which would be expected to help mitigate potential adverse impacts of the proposed development on the local landscape. As the majority of the site allocations are located within the built-up areas of Maidenhead, Windsor and Ascot, adverse impacts on the local landscape would be likely to be limited. Nevertheless, policies and information within the site proformas seek to ensure development proposals respect and enhance the character of the landscape and therefore, no adverse residual effects on the borough's landscape would be expected following the implementation of the BLPSV-PC. Residual effects are discussed in **Box 12.3**.

Box 12.3: *Residual effects and recommendations for landscape*

Residual effects	Further details of the residual effect
Alteration of the landscape character	The proposed development of 14,240 dwellings could potentially alter the distinctiveness of some surrounding landscapes. The majority of the site allocations are located within the urban settlements of Maidenhead, Windsor and Ascot. Policies and site proformas within the BLPSV-PC help to ensure that all development proposals are in-keeping with the surrounding landscape and respect the local distinctive character. However, 176.5ha of development is will take place on previously undeveloped land, leading to a likely negative alteration to landscape character. **Recommendations:** It is recommended that it is ensured all development proposals are built in accordance with relevant design statements and aim to preserve landscape features, such as trees and hedgerows where possible.
Alteration of views	Policies also help to ensure that future development would not alter important views to and from sensitive landscapes. This would be expected to result in a negligible impact on the landscape character.
Increase in urban sprawl	The need to provide housing and employment in the Plan has led to the proposed allocation of development on greenfield sites at a number of locations within the Plan area. Policies within the BLPSV-PC aim to ensure

Residual effects	Further details of the residual effect
	that development proposals are located in areas which preserve the openness of the land and are appropriate to their surroundings. This would be likely to mitigate the adverse impacts associated within development in the countryside.
Loss of tranquillity	The majority of the proposed development within the BLPSV-PC is located within the urban settlements of Windsor, Maidenhead and Ascot. Development proposals could result in a loss of tranquillity of the surrounding landscape as a consequence of increases in noise and lighting. **Recommendations:** It is recommended that all development proposals are built in accordance with relevant design statements and assess the 'change in calm' following development.

13 Population and material assets

13.1 Baseline

13.1.1 'Material assets' covers a variety of built and natural assets which are accounted for in a range of SA Objectives. It is a requirement of Annex 1 (f) of the SEA Directive to consider material assets, although the Directive does not define them. The SA process has considered material assets as the health centres, schools and other essential infrastructure resources required by meet the demands of the local population and development aspirations of the Local Plan.

13.1.2 The 2011 census indicated that the borough is home to 144,560 residents, an 8.2% increase on the 2001 census that recorded 133,626 residents. Rising birth rates and new housing is also driving a rising demand for school places. Statistics show that 80.4% of residents aged between 16 and 64 are economically active, which is more than the national average of 75.4%[105]. **Table 13.1** presents the percentage of persons in each employment sector across Windsor and Maidenhead.

Table 13.1: *Employment by occupation in Windsor and Maidenhead, South East and England*[106]

Occupation	Windsor and Maidenhead (%)	South East (%)	England (%)
Managers, Directors and Senior Officials	16.1	12.3	10.9
Professional Occupations	26.0	22.6	20.9
Associate Professional and Technical	21.4	16.2	14.8
Administrative & Secretarial	11.2	10.3	9.9
Skilled Trades Occupations	5.4	9.4	10.1
Caring, Leisure and Other Service Occupations	5.7	8.8	9.0
Sales and Customer Service Occupations	5.6	6.9	7.4
Process Plant & Machine Operatives	2.3	4.7	6.3
Elementary Occupations	5.9	8.7	10.3

[105] Nomis (2018) Labour Market Profile – Windsor and Maidenhead. Available at: https://www.nomisweb.co.uk/reports/lmp/la/1946157289/report.aspx?town=windsor%20and%20maidenhead#tabempunemp [Date Accessed: 30/09/19]

[106] Ibid

13.1.3 There is likely to be an increase in population across the Plan area. An increase in population is the basis for many of the identified adverse impacts of the Local Plan, with a larger population requiring more dwellings, better infrastructure and increased facilities capacity. The population projection of Windsor and Maidenhead in presented in **Figure 13.1**. The likely population of the borough is estimated to increase by 10,000 residents by 2041.

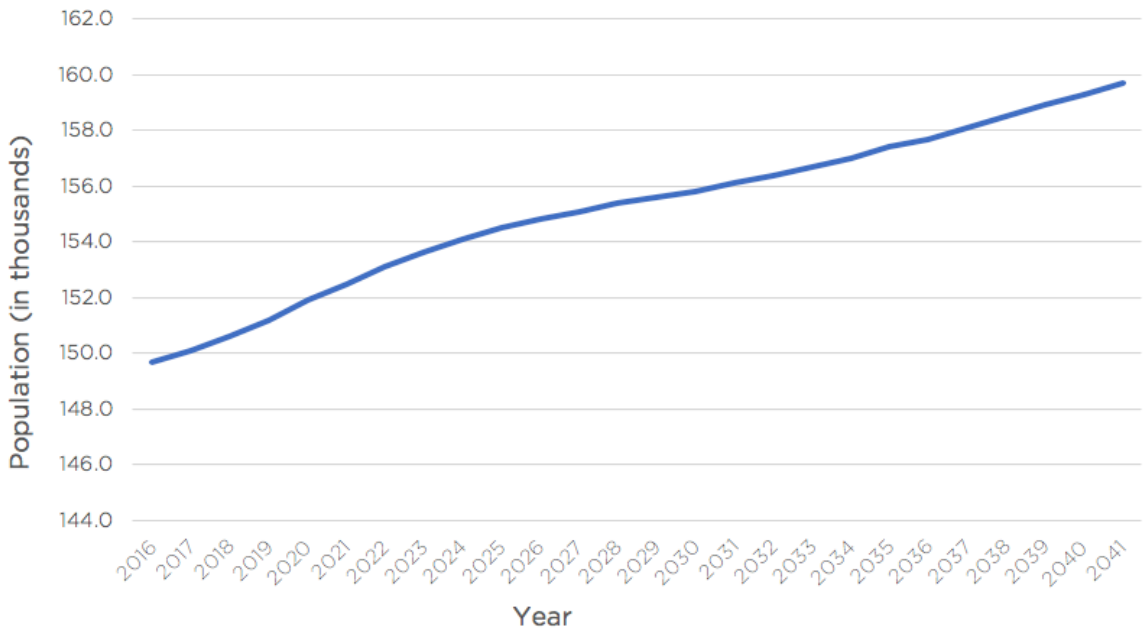

Figure 13.1: *Population projection for Windsor and Maidenhead between 2016 and 2041*[107]

[107] Office for National Statistics (2019) 2016-based subnational population projections for local authorities and high administrative areas in England. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/localauthoritiesinenglandtable2 [Date Accessed: 30/09/19]

13.1.4 High population densities can limit the accessibility of local key services and facilities such as hospitals and supermarkets and green and open spaces such as playgrounds and sports fields. High population densities also influence perceptions of safety, social interactions and community stability[108]. Residents are less likely to have access to green spaces in high population density areas but are also less likely to use it than residents in lower density areas, partly because residents in high density areas over-estimate the risk of crime. Careful layout and design are often required in high density areas to help ensure new developments are environmentally sustainable, affordable for residents and well-supported by amenities[109].

13.1.5 Exposure to a diverse range of natural habitats is significantly beneficial to physical and mental health and well-being. Good access to green and recreational areas can reduce stress, fatigue, anxiety and depression[110]. Good access to greenspaces is also associated with healthy foetal growth in pregnant women, higher birth weights, healthy microbiomes in babies and reduced rates of obesity and Type 2 diabetes. Positive impacts of access to the natural environment are particularly significant for lower socio-economic groups.

13.1.6 The consideration of 'Population' is a broad matter and has been addressed in SA Objectives 8 'Housing', 10 'Community', 11 'Transport', 12 'Education', 13 'Waste' and 14 'Economy'. The effect of combining the assessment of these objectives, seeks to create places where residents live a higher quality of life for longer, are well educated and have the necessary skills to gain employment and succeed in modern society. Indicators of these objectives include the proximity of sites to schools, accessibility to employment land, proximity to services and amenities.

[108] Dempsey. N., Brown. C. and Bramley. G. (2012) The key to sustainable urban development in UK cities? The influence of density on social sustainability. Progress in Planning 77:89-141

[109] Wong, K. S. (2010). Designing for high-density living: High rise, high amenity and high design. In (ed) Ng. E., Designing High Density Cities for Social and Environmental Sustainability, London: Earthscan.

[110] Houlden. V., Weich. S. and Jarvis. S. (2017) A cross-sectional analysis of green space prevalence and mental wellbeing in England. BMC Public Health 17:460

13.2 Impacts on population and material assets

13.2.1 **Box 13.1** presents a plan-wide summary of the adverse impacts on population and material assets that have been identified through the SA process. These adverse impacts are those identified prior to mitigation considerations. **Box 13.2** lists the policies and site proforma information within the BLPSV-PC which would be likely to mitigate, either fully or partially, some of the identified adverse impacts on population and material assets. Where mitigating policies or proformas are silent, or the contents of the BLPSV-PC only partially mitigates the adverse impacts, a residual adverse effect is identified. **Box 13.3** explores the nature of these residual effects and, where applicable, provides further recommendations for mitigation or enhancement.

Box 13.1: *Summary of identified impacts on population and material assets*

1	**Increased pressure on local services and facilities** The proposed development within the BLPSV-PC would be expected to increase population density in some locations of RBWM. This would be likely to place greater pressures on the capacity of services within the Plan area, including schools, GP surgeries, leisure centres and open spaces. This pressure would be likely to be higher in smaller settlements such as Sunningdale, Ascot and Cookham Rise.
2	**Reduced access to services and facilities** A small proportion of site allocations would be situated outside of the sustainable distance to essential services, such as healthcare facilities, local convenience stores and the local PRoW or cycle network. Good access to these services is essential to reduce reliance on personal car use, encourage healthy and active lifestyles, and provide accessibility to spaces which could potentially have benefits to mental wellbeing and community cohesion. Approximately 16 of the site allocations are located outside of the sustainable distance to primary and secondary education facilities.
3	**Provision of housing to meet local need** The BLPSV-PC proposes the development of at least 14,240 dwellings across the Plan period. This would be expected to meet the locally identified housing need and have a positive impact on the borough's housing stock. The degree to which residents from vulnerable groups, such as those on low incomes and the elderly, would benefit from the increased housing provision would be dependent upon the size, type and tenure of housing provided.

Box 13.1: *Summary of identified impacts on population and material assets*	
4	**Provision of employment opportunities** The BLPSV-PC proposes the development sites for employment floorspace, providing at least 11,200 new employment opportunities. This increase of employment floorspace would be expected to meet the identified local need and have a positive impact on the local economy, as well as the wellbeing of residents. The degree to which residents from vulnerable groups would benefit from increase employment floorspace would be dependent on the use class of the development.
5	**Increased household waste generation** The proposed development within the BLPSV-PC would be expected to increase household waste generation within the Plan area. There is little scope for policies within the BLPSV-PC to reduce the volume of waste produced by households, however, adequate and well-located waste and recycling facilities and storage within development would be expected to encourage residents to recycle and have a positive impact on waste storage.

13.3 Local Plan mitigation

13.3.1 The proposed development within the BLPSV-PC aims to meet the identified housing and employment needs of the borough. The spatial strategy for the Local Plan aims to ensure that residents are located in close proximity to essential services and facilities and have adequate access to employment opportunities. Policies and proformas which would be expected to mitigate or enhance the impact of development on the local population and material assets are discussed in **Box 13.2** below.

Box 13.2: *Local Plan policy/ proforma mitigation for identified impacts on population and material assets*

	Population and material assets impact 1: Local Plan policy/ proforma mitigation which could help avoid or reduce Increased pressure on local services and facilities (see impact 1, Box 13.1)
Site Proformas AL1, AL2, AL3, AL4, AL7, AL9, AL10, AL13, AL16, AL18, AL29 and AL33 These twelve site allocations include retail provision, which would be expected to help mitigate the likely increased pressure on local services and facilities.	
Site Proforma AL13 This site proforma includes the provision for *"a range of services and facilities within the Local Centre including local convenience retail, leisure, community facilities, including space for police, health, and local recycling".*	

Site Proforma AL16

This site proforma includes the requirement for a *"'village square' on the southern side of the High Street with community/cultural/leisure/retail uses and public open space".*

Population and material assets impact 2: Local Plan policy/ proforma mitigation which could help avoid or reduce impacts of being located away from easy access to services and facilities (see impact 2, Box 13.1)

Policy SP1 – Spatial Strategy for the Royal Borough of Windsor and Maidenhead

Through locating the majority of new development within the towns of Maidenhead, Windsor and Ascot, this policy would be expected to provide new residents with good access to existing local services and facilities, such as convenience stores, railway stations and schools.

Policy QP1 – Sustainability and Placemaking

This policy would help to ensure that development proposals promote community cohesion and contribute towards locally important infrastructure requirements. The policy states that development should seek to create a *"positive place identity"*. Additionally, in order to promote vibrant and accessible communities, this policy would help to ensure that all new development is considerate of local walking and cycling networks to improve access in local centres.

Policy QP3 – Character and Design of New Development

Under this policy, well-connected layouts would be provided. This includes pedestrian and cycling routes, which, in addition to encouraging physical exercise, would be expected to provide alternative sustainable modes of transport. This policy would also be likely to make a positive contribution to reducing crime and fear of crime in the local area. This would be expected to create safe and cohesive communities and help to improve quality of life for residents.

Policy HO1 – Housing Development Sites

Under this policy, new development proposals for housing sites would be located in close proximity to existing centres. This would be expected to ensure that residents are located within a sustainable distance to local services and facilities, including schools and workplaces and to public transport facilities such as bus stops and railway stations.

Policy HO4 – Gypsies and Travellers

This policy aims to ensure that traveller accommodation is situated in sustainable locations, with good access via *"sustainable modes of transport to a settlement with health care, retail, and school facilities with capacity".*

Policy HO5 – Loss and Subdivision of Dwellings

This policy would be expected to ensure that subdivided development has satisfactory access for pedestrians and vehicles, including provision of car parking and cycle storage.

Policy ED2 – Protected Employment Sites

This policy seeks to maintain or upgrade existing employment sites *"subject to the provision of appropriate infrastructure and safe access"*

Policy ED4 – Farm Diversification

This policy seeks to ensure that farm diversification proposals are located with suitable access to the local road network and do not result in adverse impacts on local traffic flows by ensuring that development is *"well located in relation to villages, settlements and towns".*

Policy TR1 – Hierarchy of Centres

This policy aims to support and strengthen centres. This would be expected to provide benefits at the local community scale, in terms of residents' access to local services and facilities, as well as strengthening the local economy.

Policy VT1 – Visitor Development

This policy could potentially help to ensure that visitor developments are accessible via walking, cycling and public transport routes.

Policy EP2 – Air Pollution

This policy would be expected to encourage the use of sustainable transport methods and electric car charging points in order to minimise reliance on personal car use.

Policy IF1 – Infrastructure and Developer Contributions

Suitable supporting infrastructure would be provided under this policy, through on-site provision or funding including via the Community Infrastructure Levy (CIL). This would be expected to include a range of infrastructure including road transport, leisure and healthcare facilities and schools.

Policy IF5 – Rights of Way and Access to the Countryside

This policy would be expected to improve local accessibility via walking or cycling to local services and facilities, including *"local schools, shops, stations and other community facilities".*

Policy IF6 – Community Facilities

This policy would be expected to ensure that existing local services are retained, maintained and enhanced, which would be likely to improve local residents' access to essential services, providing benefits to the local community.

Policy IF7 – Utilities

With improvements to telecommunications in the area under this policy, residents would have a greater access to internet-based services from home and would be likely to enhance opportunities for home-working.

Site Proformas AL1, AL2, AL3, AL4, AL5, AL7, AL8, AL9, AL10, AL12, AL13, AL14, AL15, AL16, AL17, AL18, AL20, AL21, AL22, AL24, AL25, AL26, AL28, AL29, AL33, AL35, AL36, AL37, AL39 and AL40

These site proformas all require development proposals to incorporate improvements to the local public transport network, which would be expected to help improve access to local services and facilities.

Site Proforma AL11

This site proforma aims to ensure future developments *"provide adequate vehicle and cycle parking provision proportionate to and in line with the implemented sustainable transport measures".*

Site Proformas AL1, AL2, AL3, AL4, AL5, AL7, AL8, AL9, AL10, AL12, AL13, AL14, AL15, AL16, AL17, AL18, AL19, AL20, AL21, AL22, AL23, AL24, AL25, AL27, AL28, AL29, AL30, AL31, AL33, AL34, AL35, AL36, AL37, AL38, AL39 and AL40

These site proformas specify that development proposals should consider improvements to the local pedestrian and cycle networks, which would be expected to help improve access to local services.

Population and material assets impact 3: Local Plan policy/ proforma mitigation which could help avoid or reduce the risk of not providing the right mix of housing for residents in the borough (see impact 3, Box 13.1)

Policy HO1 – Housing Development Sites

This policy states that *"the Borough Local Plan will provide for at least 14,240 new dwellings in the plan period up to 2033".* This would be expected to satisfy the identified local housing need.

Policy HO2 – Housing Mix and Type

The policy requires residential developments to *"contribute to meeting the needs of current and projected households"* and *"provide an appropriate mix of dwelling types and sizes".*

Policy HO3 – Affordable Housing

This policy requires *"all development for 10 dwellings gross, or more than 1,000 sqm of residential floorspace, to provide on-site affordable housing"*, which would be expected to ensure that a suitable mix and tenure of residential development is provided to meet the needs of the population.

Policy HO5 – Loss and Subdivision of Dwellings

Through the subdivision of dwellings to provide additional accommodation, and resisting the loss of residential development, this policy would be expected to encourage a net gain of housing across the Plan area.

Site Proformas AL1, AL2, AL3, AL4, AL5, AL6, AL7, AL9, AL10, AL12, AL13, AL16, AL17, AL18, AL19, AL20, AL21, AL22, AL23, AL24, AL25, AL26, AL29, AL30, AL31, AL32, AL33, AL34, AL35, AL36, AL37, AL38, AL39 and AL40

These sites are proposed for housing development and would therefore be expected to have a positive impact on the housing provision in the borough.

Population and material assets impact 4: Local Plan policy/ proforma mitigation which could help avoid or reduce the risk of not providing enough employment opportunities for the skills profile of residents in the borough (see impact 4, Box 13.1)

Policy ED1 – Economic Development

This policy aims to provide 11,200 additional jobs within the borough, which would be expected to meet local employment needs throughout the Plan area and encouraging economic growth.

Policy ED2 – Protected Employment Sites

This policy aims to protect certain existing employment locations and would be expected to help reduce the loss of employment floorspace across the Plan area, including preventing the net loss of commercial floorspace.

Policy ED3 – Other Sites and Loss of Employment Floorspace

Policy ED3 seeks to ensure that development proposals do not result in a loss of employment floorspace, unless it has been demonstrated that it would not adversely impact the local economy.

Policy ED4 – Farm Diversification

This policy would be likely to enhance the rural economy within the Plan area and provide additional employment opportunities.

Policy TR1 – Hierarchy of Centres

This policy would be likely to support growth of key employment areas across the Plan area.

Policy VT1 – Visitor Development

Through supporting visitor related development, this policy would be expected to boost tourism and subsequently provide local employment opportunities.

Policy IF7 – Utilities

With improvements to telecommunications in the area under this policy, residents would have a greater opportunity to access essential services from home. This would provide increased opportunities to work from home and access to a larger range of employment opportunities.

Site Proformas AL1, AL2, AL3, AL4, AL7, AL8, AL9, AL10, AL11, AL13, AL14, AL15, AL16, AL18, AL20, AL21, AL25, AL29 and AL33

These site allocations are proposed for employment floorspace, which would be expected to increase the provision of employment opportunities across the Plan area.

Population and material assets impact 5: Local Plan policy/ proforma mitigation which could help avoid or reduce increased household waste generation (see impact 5, Box 13.1)

Policy QP3 – Character and Design of New Development

Through the provision of suitable waste storage methods and recycling facilities, this policy would be likely to help to reduce the volume of waste produced per household and encourage recycling.

Policy HO5 – Loss and Subdivision of Dwellings

This policy aims to ensure subdivided development has suitable space for refuse and recycling.

Site Proforma AL13

This site proforma seeks to ensure that development proposals at this location provide local recycling facilities.

Site Proforma AL17

This site proforma aims to *"address the loss of the existing waste uses on the site".*

13.4 Residual effects on population and material assets

13.4.1 Residual effects are those that remain after the application of the BLPSV-PC mitigating policies and site proformas. Many of the policies and site proformas would be expected to have positive residual effects in relation to population, in particular for housing and employment floorspace provision. A residual adverse effect in relation to material assets would be likely to be the expected increase in household waste generation over the Plan period. Residual effects in relation to population and material assets are discussed further in **Box 13.3**.

Box 13.3: *Residual effects and recommendations for population and material assets*

Residual effects	Further details of the residual effect
Increased demand on local services and facilities	The Plan is expected to have a **negligible residual effect** on increased demand for services and facilities. Several of the site allocation are located outside a sustainable distance to local services such as a convenience store or school. Some of the site allocation within the BLPSV-PC are proposed the development of community services, which may help mitigate the increased demand on existing services. In addition, the BLPSV-PC aims to improve sustainable transport options throughout the borough, and therefore, provide greater opportunities for residents to access services around RBWM. This would be anticipated to mitigate the increase demand on services.
Reduced access to services and facilities	The Plan is expected to have a **minor positive residual effect** on access to services and facilities. Policies and site proforma information within the BLPSV-PC would be anticipated to help improve residents' accessibility via sustainable transport options, including frequent bus services and improved pedestrian and cycle networks. This would be likely to help improve access to existing local services and facilities for new and current residents.
Provision of housing to meet local need	The proposed development of 14,240 dwellings across the Plan area would be expected to make a positive contribution towards meeting the identified local housing need. Policies within the BLPSV-PC would be expected to ensure that residential developments meet the needs of the local community, including affordable housing and gypsy and traveller accommodation.

Residual effects	Further details of the residual effect
Provision of employment opportunities	The proposed development of 11,200 new employment opportunities through development allocations within the BLPSV-PC would be expected to make a positive contribution to meeting the employment needs of residents. Policies within the BLPSV-PC help to ensure that a range of types and sizes of employment land are available. This would be expected to have benefits to the local economy.
Increased household waste generation	It is difficult for the BLPSV-PC to specifically reduce waste generation within the Plan area. The introduction of 33,606 new residents would be expected to increase waste production, regardless of recycling rates in the borough. Behavioural changes would be required to reduce waste generation, which can only be encouraged through the influence Local Plan policies. Policies and Site Proforma AL13 (Desborough) within the BLPSV-PC aim to ensure developments provide suitable waste storage methods and recycling facilities to encourage recycling. In accordance with the NPPF, development proposals are required to *"minimise waste"* and make sufficient provision for *"waste management"*, which would be expected to ensure the construction phase of development takes into consideration waste generation and uses recycled material where appropriate. The Central and Eastern Berkshire Joint Minerals and Waste Plan[111] will aim to efficiently manage waste within the borough. **Recommendations:** It is recommended that household waste generation is monitored, including the volume of waste recycled or disposed of improperly.

[111] Central and eastern Berkshire Authorities (no date) Joint Minerals and Waste Plan. Available at: https://www.hants.gov.uk/landplanningandenvironment/berksconsult [Date Accessed: 14/10/19]

14 Soil

14.1 Baseline

14.1.1 Soil is an essential and non-renewable resource that provides a wide range of ecosystem services. It filters air, stores and cycles water and nutrients, decomposes and cycles organic matter, supports plant growth and provides medicines[112]. Soil is also one of the most important natural carbon sinks globally and its protection is vital in efforts to mitigate anthropogenic climate change. It can reduce flood risk, alleviate flood damage and improve local water and air quality to the benefit of ecosystem and human health.

14.1.2 For development to be sustainable, decision makers must make best efforts to conserve soil resources. Development such as that proposed in the Local Plan can potentially adversely impact soil stocks, such as by direct loss of soil (e.g. excavation during construction), contamination, increased erosion, breakdown of structure and loss of nutrients. In recent years, soils in the UK have rapidly degraded, predominantly due to intensive agricultural production and industrial pollution. The UK's soil continues to face three main threats, each of which will be exacerbated by climate change[113]:

- Soil erosion by wind and rain (it is estimated that the UK loses 2.2 million tonnes of topsoil every year due to wind and water erosion);
- Compaction; and
- Organic matter decline.

14.1.3 Construction on land has the potential to exacerbate compaction of soils and the decline in organic matter, whilst all three of the above threats are expected to be exacerbated by climate change.

[112] Food and Agriculture Organization of the United Nations (2019) Soil ecosystem services. Available at: http://www.fao.org/agriculture/crops/thematic-sitemap/theme/spi/soil-biodiversity/soil-ecosystems-services/en/ [Date Accessed: 30/09/19]

[113] Defra (2009) Safeguarding our soils – A strategy for England. Available at: https://www.gov.uk/government/publications/safeguarding-our-soils-a-strategy-for-england [Date Accessed: 30/09/19]

14.1.4 Soils vary across the Plan area, with soils in the centre of the borough characterised by impeded drainage, moderate fertility and suitable for seasonally wet pastures and woodland, the north of the borough described as freely draining, of high fertility and suitable for base-rich pastures and deciduous woodland, and in the south of the borough soils are described as naturally wet, of very low fertility and suitable for mixed dry and wet lowland heath communities[114].

14.1.5 The significant majority of soil in the Plan area is Grade 3 Agricultural Land Classification (ALC), some of which could potentially be Grade 3a (i.e. some of the Best and Most Versatile soils). Grade 2 ALC land is present in the Plan area to the north west, with the south of the borough being of predominantly non-agricultural land.

14.1.6 The issue of soil was taken into consideration under two SA Objectives; SA Objective 4 'Biodiversity and geodiversity', which seeks to conserve and enhance the borough's geodiversity and SA Objective 7 'Use of resources', which seeks to protect, conserve and ensure efficient use of the borough's natural resources.

14.2 Impacts on soil

14.2.1 **Box 14.1** presents a plan-wide summary of the adverse impacts on soil that have been identified through the SA process. These adverse impacts are those identified prior to mitigation considerations. **Box 14.2** lists the policies and site proforma information within the BLPSV-PC which would be likely to mitigate, either fully or partially, some of the identified adverse impacts on soil. Where mitigating policies or proformas are silent on matters relating to soils, or the contents of the BLPSV-PC only partially mitigates the adverse impacts, a residual adverse effect is identified. **Box 14.3** explores the nature of these residual effects and, where applicable, provides further recommendations for mitigation or enhancement.

[114] Cranfield Soil and Agrifood Institute (no date) Soilscapes. Available at: http://www.landis.org.uk/soilscapes/ [Date Accessed: 30/09/19]

***Box 14.1:** Summary of identified impacts on soil*	
1	**Loss of soil resources** The BLPSV-PC proposes the development of at least 14,240 dwellings across the Plan area, approximately 176.5ha of which would be expected to be on previously undeveloped land. The development of new buildings on previously undeveloped land would be expected to result in a direct loss of soil resource, with little or no scope for mitigation.
2	**Loss of best and most versatile (BMV) land** BMV land is defined through the Agricultural Land Classification system as Grades 1, 2 and 3a (soil which is most flexible, productive and efficient in response to inputs and which can best deliver food and non-food crops for future generations). Sites AL21, AL24, AL27, AL36, AL37, AL38 and AL39 are located on Grade 1, 2 or 3a land.
3	**Ecosystem Services** Soil provides a range of essential services to the local area, including nutrient cycling, abating flood risk, filtering water, filtering air, carbon storage and providing the basis for vegetation to flourish. In order for soil to continue providing each service, careful consideration should be given to its structure and stability. Where construction occurs, soil could potentially be compacted by heavy vehicles on-site. During the occupation or operation phase of development, soil, in some circumstances, could potentially be paved over, become subject to increased footfall or be subject to increased volumes of fertilisers and other chemicals.
4	**Reduced accessibility to Mineral Safeguarding Areas** There are considerable volumes of sand and gravel resources located within the borough. Development which coincides with these areas could potentially restrict extraction, having adverse impacts on local soil resources and the local economy. Approximately 3ha or more of Sites AL13, AL20, AL21, AL24, AL26, AL35, AL37, AL39 and AL40 are coincident with an identified MSA.

14.3 Local Plan mitigation

14.3.1 The BLPSV-PC considers soil as an import local resource. Many policies and site proformas within the BLPSV-PC aim to prevent the unnecessary loss of soil and BMV land. These policies and proformas are discussed in **Box 14.2**.

Box 14.2: *Local Plan policy/ proforma mitigation for identified impacts on soil*

Soil impact 1: Local Plan policy/ proforma mitigation which could help avoid or reduce loss of soil resources (see impact 1, Box 14.1)

Policy SP1 – Spatial Strategy for the Royal Borough of Windsor and Maidenhead

Through directing new development within the borough towards the strategic growth areas of Maidenhead, Windsor and Ascot, and ensuring development outside these towns is *"focused on existing urban sites wherever possible",* this policy would be expected to provide good opportunities for the development of previously developed or brownfield land.

Policy QP1a – Maidenhead Town Centre Strategic Placemaking Area

All of the site allocations within this policy are located on previously developed land, and as such development would help to protect ecologically or agriculturally important soil across the Plan area.

Policy QP5 – Green Belt

By restricting development proposals permitted within the Green Belt, with particular reference to the re-use of buildings or infilling, this policy could potentially help to direct new development towards previously developed land.

Policy HO5 – Loss and Subdivision of Dwellings

Development proposals for the subdivision of dwellings would be permitted under this policy, which would be expected to reduce the volume of previously undeveloped land built on across the Plan area.

Policy ED1 – Economic Development

By directing employment development proposals to existing sites, through intensification and redevelopment, this policy would be expected to provide good opportunities for the development of previously developed or brownfield land.

Policy ED2 – Protected Employment Sites

This policy promotes development located within existing identified employment sites, including the redevelopment or intensification of premises, which could potentially help direct new development towards previously developed land.

Policy ED4 – Farm Diversification

The policy states that proposals for farm diversification would be permitted if *"the proposal should re-use or adapt any existing farm buildings which are suitable".* This policy therefore promotes development on brownfield sites.

Policy TR1 – Hierarchy of Centres

By directing retail, leisure and other developments to existing centres, this policy would be expected to provide good opportunities for the development of previously developed or brownfield land.

Site Proformas AL1, AL2, AL3, AL4, AL5, AL6, AL7, AL9, AL10, AL12, AL15, AL16, AL17, AL18, AL19, AL20, AL22, AL27, AL28, AL29, AL30, AL31, AL32, AL33, AL34 and AL35.

These sites are located on previously developed land. This would be likely to help reduce the quantity of development which would be expected to result in the loss of soil resources.

Soil impact 2: Local Plan policy/ proforma mitigation which could help avoid or reduce of BMV land (see impact 2, Box 14.1)

Policy QP5 – Green Belt

The policy states that *"proposals should not result in the irreversible loss of best and most versatile agricultural land".*

Site Proformas AL21, AL24, AL26, AL37, AL38 and AL39

These proformas seek to *"conserve the best and most versatile soils on the site as far as possible"* through ensuring *"food production can continue through the provision of allotments or community gardens/orchards"* or *"on-site open space".*

Soil impact 3: Local Plan policy/ proforma mitigation which could help avoid or reduce loss of ecosystem services (see impact 3, Box 14.1)

Policy NR2 – Nature Conservation & Biodiversity

This policy would help to reduce the quantity of soils lost to new developments, and as such aid the preservation of ecologically important soils including below-ground flora and fauna.

Policy NR3 – Trees, Woodlands and Hedgerows

Trees serve an important role in protecting soil from erosion as a result of rainfall and surface water runoff, due to the stabilisation provided by roots and interception of rainfall by foliage.

All Site Proformas

All site proformas aim to ensure the retention of the local ecological network or enhancement of green infrastructure, which would be expected to help improve ecosystem services.

Site Proformas AL1, AL15, AL20 and AL27

These proformas seek to enhance vegetation, in particular trees, on site, which would be expected to help protect some of the local soil ecosystem services.

Site Proformas AL13, AL20, AL21, AL24, AL26, Al35, AL37, AL39 and AL40

These site proformas state that "*a minerals assessment to assess the viability and practicality of prior extraction of the minerals resource will need to be undertaken*". This would be likely to mitigate potential adverse impacts due to development within MSAs.

14.4 Residual effects on soil

14.4.1 Policies and site proformas within the BLPSV-PC seek to mitigate some of the adverse impacts identified. Overall, the BLPSV-PC aims to reduce the quantity of soil lost to development, primarily through focusing development to areas of previously developed land. However, some site allocations are situated on previously undeveloped land. The policies and site proformas within the BLPSV-PC cannot fully mitigate the adverse impacts of development on ecologically and agriculturally important soils. **Box 14.3** sets out the residual adverse effects of the BLPSV-PC on soil, and any recommendations which could potentially further mitigate these impacts.

Box 14.3: *Residual effects and recommendations for soil*

Residual effects	Further details of the residual effect
Loss of soil resources, including BMV land	Policies and proformas within the BLPSV-PC aim to reduce the volume of soil resources lost due to development. This primarily focuses on the provision of allotments in areas of BMV land and by prioritising development on previously developed sites. The loss of permeable soils could potentially increase the risk of flooding and result in a loss of biodiversity across the Plan area. Loss of soil can also result in an increase in soil erosion and have subsequent impacts on air quality and agricultural yield. The loss of 176.5ha of soil, including BMV land, would be expected to be a permanent and irreversible impact. **Recommendations:** It is recommended that the volume of soil and BMV land lost to development is monitored.
Ecosystem services	The BLPSV-PC does not explicitly refer to the impact of development on ecosystem services. Paragraph 170(b) of the NPPF requires planning policies and decisions to enhance the natural environment by *"recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services"*. Policies within the BLPSV-PC aim to increase provision of green infrastructure across the Plan area, however, the proposed development would be expected to reduce the ability of the local soil biome to effectively provide ecosystem services. The loss of ecosystem services would be likely to be a long-term but reversible impact. **Recommendations:** It is recommended that the loss of soil is monitored and subsequent impacts on local biodiversity evaluated.

15 Water

15.1 Baseline

15.1.1 With the River Thames running along the borough's northern perimeter, the issue of flooding in the Royal Borough of Windsor and Maidenhead is a key matter for consideration.

15.1.2 The occurrence of extreme weather events is likely to increase in the near future due to the changing climate. In the UK, the rising risk of fluvial and pluvial (surface water) flooding is of primary concern. In 2009 the EA estimated 2.4 million properties in England were susceptible to fluvial and/or coastal flooding, whilst 3.8 million properties in England were susceptible to pluvial flooding. A complex network of waterways course through the Plan area. Associated with these waterways are differing extents of fluvial and pluvial flood risk.

15.1.3 Vegetation cover helps to reduce runoff, slowing the flow of surface water and reducing the risk of flooding. Some sites proposed in the Local Plan would be likely to result in a net loss in vegetation cover (i.e. those comprising previously undeveloped land), and as such may compromise flood risk in some locations.

15.1.4 The Queen Mother Reservoir is located in the east of the borough and covers 192ha and is one of the largest areas of inland water in southern England. Water from the reservoir is used to supply tap water to London and elsewhere.

15.1.5 The borough's water is supplied by the Thames catchment area. Over the past 12 months the Thames area has experienced notably low rainfall. For example, in April 2019 the Thames area received 27mm of rainfall, representing 54% of the long-term average. Following a month of below average rainfall, river flow declines across the area as well as a decline in groundwater levels[115]. The Plan area is identified as being under serious water stress[116], new developments within the Plan area will increase demand of an already stressed resource.

15.1.6 The majority of the borough is located within the Thames Lower water operational catchment[117]. Of the 17 waterbodies within this catchment, many are not achieving good status in terms of water quality due to agriculture and rural land management, transport and the water industry.

15.1.7 Source Protection Zones (SPZs) for groundwater are defined as wells, boreholes and springs used for public drinking supply. These zones highlight the risk of contamination from activities that may cause pollution in the area[118]. The majority of the Plan area is located within SPZ I, II or III.

15.1.8 Water has been taken into account under SA Objective 2 'Water and flooding' which seeks to reduce water consumption, prevent the reduction in water quality and reduce the number of people at risk of fluvial and pluvial flooding.

[115] EA (2019) Monthly water situation report. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/800886/Thames_Water_Situation_Report_April_2019.pdf [Date Accessed: 30/09/19]

[116] EA (2013) Water stressed areas – final classification, July 2013, developed by the Environment Agency and Natural Resources Wales. The new methodology identifies areas of serious water stress where:

(a) The current household demand for water is a high proportion of the current effective rainfall which is available to meet that demand; or

(b) The future household demand for water is likely to be a high proportion of the effective rainfall available to meet that demand.

[117] EA (2019) Catchment Data Explorer: Maidenhead and Sunbury. Available at: https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3054 [Date Accessed: 30/09/19]

[118] EA (2009) Groundwater Source Protection Zones – Review of Methods. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/290724/scho0309bpsf-e-e.pdf [Date Accessed: 30/09/19]

15.2 Impacts on water

15.2.1 **Box 15.1** presents a plan-wide summary of the adverse impacts on water that have been identified through the SA process. These adverse impacts are those identified prior to mitigation considerations. **Box 15.2** lists the policies and site proforma information within the BLPSV-PC which would be likely to mitigate, either fully or partially, some of the identified adverse impacts on water. Where mitigating policies or proformas are silent, or the contents of the BLPSV-PC only partially mitigates the adverse impacts, a residual adverse effect is identified. **Box 15.3** explores the nature of these residual effects and, where applicable, provides further recommendations for mitigation or enhancement.

Box 15.1: *Summary of identified impacts on water*

1	**Fluvial Flood Risk** The majority of sites are located in Flood Zone 1, however, eight sites in the BLPSV-PC partially coincide with Flood Zones 2, 3a and 3b (AL4, AL9, AL10, AL14, AL25, AL26, AL39 and AL40). Any proposed development within Flood Zones 2, 3a or 3b could potentially increase the risk of flooding, resulting in damage to properties and implications for human health and safety in the immediate area. Development within Flood Zones 2, 3a and 3b would also be likely to exacerbate flood risk in the surrounding areas.
2	**Pluvial Flood Risk** Approximately half of the allocated sites in the BLPSV-PC are located in areas determined to be at low, medium and high risk of pluvial (surface water) flooding. Any proposed development in areas of pluvial flood risk could potentially locate site end users in areas at risk of flooding, with safety implications, and further exacerbate flood risk in the surrounding areas.
3	**Reduction in water quality** Approximately 176.5ha of development proposed within the BLPSV-PC is located on previously undeveloped land. The construction and occupation of these developments would be likely to increase the risk of contamination and pollution of waterways, primarily due to the potential loss of soil and potential disruption to the groundwater sources. Site allocations that are located in close proximity to local watercourses could potentially increase the risk of decreasing local water quality. The majority of the Plan area is within a groundwater Source Protection Zone (SPZ). These zones indicate the potential risks of different types of development for groundwater quality. With the majority of development in the BLPSV-PC being proposed at a location within an

Box 15.1: *Summary of identified impacts on water*	
	SPZ, there could potentially be an overall increase in the risk of groundwater contamination or pollution in the Plan area.
4	**Increased water demand** The proposed development of 14,240 dwellings within the BLPSV-PC would be expected to increase the local population, and subsequently, increase water demand within the borough. It is uncertain the extent to which demand per capita will change over the Plan period, however, development proposed in the BLPSV-PC has the potential to increase total water consumption in some locations.
5	**Impact on ecosystem services** Water provides a range of essential ecosystem services, including drinking water, filtering water pollutants, providing the basis for vegetation to flourish, mental and physical wellbeing, and supporting biodiversity. In order for water to continue providing each service, careful consideration should be given to development proposals which could potentially have an adverse impact on water supply and quality.

15.3 Local Plan mitigation

15.3.1 Policies and site proformas within the BLPSV-PC aim to reduce flood risk, prevent the decrease of water quality and improve water efficiency in new developments within the Plan area. The provision of green infrastructure would be expected to slow infiltration and help alleviate flood risk to some extent. The policies and proforma information are discussed in detail in **Box 15.2**.

Box 15.2: *Local Plan policy/ proforma mitigation for identified impacts on water*

	**Water impact 1 and 2: Local Plan policy/ proforma mitigation which could help avoid or reduce fluvial and pluvial flood risk (see impact 1 and 2, Box 15.1)**
Policy QP1 – Sustainability and Placemaking The policy aims to enhance green and blue infrastructure, which would also be expected to help reduce water runoff rates and enhance natural water storage and flow functions and as such, reduce the risk of both fluvial and pluvial flooding.	
Policy SP2 – Climate Change The increased planting of vegetation associated with new developments could potentially have a beneficial impact on flood risk by reducing water runoff rates. This policy states that *"all development shall minimise the impact of surface water runoff from the development in the*	

design of the drainage system" and include further mitigation for fluvial flooding prevention where required.

Policy QP2 – Green and Blue Infrastructure

Green infrastructure would also be expected to help reduce water runoff rates and as such, reduce the risk of both fluvial and pluvial flooding. This policy promotes the use of SUDs, which, alongside the requirements of the NPPF and PPG, would be expected to have a beneficial impact on local surface water flooding issues.

Policy HO4 – Gypsies and Travellers

This policy would only grant planning permission for sites which are "*not located in an area at high risk of flooding as defined by the Council's strategic flood risk assessment".*

Policy NR1 – Managing Flood Risk and Waterways

This policy would be expected to ensure that flood risk assessments are carried out where required, in accordance with national planning policy, in order to direct development proposals away from areas at risk of fluvial or pluvial flooding. This would also be likely to help ensure that new development does not exacerbate current flooding issues within the Plan area. Furthermore, the requirement for SUDs to be incorporated within new development would be expected to reduce surface water flood risk.

Policy NR2 – Nature Conservation & Biodiversity

The enhancement of features of conservation value including green infrastructure would be expected to help reduce water runoff rates and as such, reduce the risk of both fluvial and pluvial flooding.

Site Proformas AL2, AL4, AL5, AL7, AL9, AL10, AL11, AL14, AL15, AL16 and AL36

These site proformas help to ensure that development proposals at these locations *"address surface water flooding".*

Site Proforma AL14

This site is partially located within Flood Zones 2 and 3. This site proforma ensures that future development *"address fluvial flooding issues, including directing development away from Flood Zone 3b areas which are located to the north and west of the site".*

Site Proforma AL28

This proforma helps to ensures that *"as site is in Flood Zones 2, 3a and 3b, flood attenuation areas should be provided as a defensible buffer for proposed development".*

Site Proforma AL9

A proportion of this site is coincident with Flood Zones 2 and 3. This site proforma aims to ensure that development proposals on site *"direct development away from areas at highest risk of flooding on eastern part of site".*

Site Proforma AL15

This site is partially located within Flood Zones 2 and 3. The proforma seeks to ensure development proposals *"avoid built development in areas subject to flooding".*

Site Proforma AL26

Site AL26 partially coincides with Flood Zone 2. This site proforma aims to ensure development proposals *"achieve flood risk betterment on site by incorporating appropriate flood risk reduction measures".*

Site Proformas AL30 and AL40

Both of these site allocations are partially located on land at risk of fluvial flooding. The site proformas ensure that development only occurs on land within Flood Zone 1.

Site Proforma AL27

This site is proposed for a Strategic Green Infrastructure location. The retention and enhancement of green infrastructure would be likely to have benefits to flood attenuation in the local area.

Site Proforma AL39

This proforma aims to ensure that development proposals *"integrate SUDS and other flood alleviation measures to mitigate flood risk throughout the site".*

Water impact 3: Local Plan policy/ proforma mitigation which could help avoid or reduce degradation of water quality (see impact 3, Box 15.1)

Policy QP4 – River Thames Corridor

This policy would be expected to help prevent the reduction in water quality to some extent, as the policy requires an eight-metre zone on either side of the river Thames to be left undeveloped, helping prevent contamination of the river.

Policy EP5 – Contaminated Land and Water

This policy would be expected to ensure that new developments do not lead to deterioration of water quality, including groundwater Source Protection Zones (SPZs) and above ground flows.

Site Proforma AL37

This site proforma ensures that future development has *"due regard to water source protection".*

Site Proformas AL4, AL5, AL7, AL9, AL10, AL11 and AL14

These site proformas seek to *"address … groundwater source protection zone issues".*

Water impact 4: Local Plan policy/ proforma mitigation which could help avoid or reduce increased demand for water (see impact 4, Box 15.1)

Policy IF7 – Utilities

This policy would help to ensure that water treatment works within the Plan area have sufficient capacity to deal with any increase in demand that arises from development proposed in the Plan.

Site Proforma AL32

This site proforma states that development proposals should *"provide local waste water and surface water infrastructure upgrades".*

Site Proformas AL4, AL5, AL9, AL10, AL14, AL16 and AL25

These seven site proformas seek to *"provide waste water drainage infrastructure"* which would be likely to address network capacity issues.

Water impact 5: Local Plan policy/ proforma mitigation which could help avoid or reduce loss of ecosystem services (see impact 5, Box 15.1)

Policy QP2 – Green and Blue Infrastructure

Improvements to the quality and quantity of the borough's blue infrastructure network would be likely to enhance natural water storage and flow functions.

Policy NR2 – Nature Conservation & Biodiversity

This policy aims to ensure development proposals *"avoid the loss of biodiversity and the fragmentation of existing habitats, and enhance green corridors and networks"*, which includes aquatic ecosystems.

Policy EP1 – Environmental Protection

This policy states that development proposals *"should seek to conserve, enhance and maintain existing environmental quality in the locality, including areas of ecological value (land and water based)".*

Site Proforma AL27

This site proforma states that development proposals at the site should incorporate a pond, away from public footpaths, to *"enhance the value of the local wildlife".*

Site Proforma AL30

This proforma aims to ensure that development proposals *"provide a strong green infrastructure network across the site that is highly connected to the River's edge and capable of supporting enhanced biodiversity, and leisure functions".*

Site Proformas AL1, AL4, AL5, AL6, AL7, AL12, AL13, AL14, AL16, AL17, AL18, AL19, AL20, AL21, AL23, AL25, AL29, AL31, AL32, AL33, AL36, AL38, AL40

These site proformas specifically refer to the integration and/or provision of blue infrastructure, which would be expected to help reduce potential adverse impacts on the local ecosystem.

All Site Proformas

All site proformas aim to retain and enhance the local ecological network where possible, primarily through the provision of green infrastructure. This would be likely to have benefits in regard to natural infiltration of surface water.

15.4 Residual effects on water

15.4.1 Residual adverse effects would be expected to remain in terms of water following the implementation of the BLPSV-PC policies and proformas. Further details, and potential recommendations to help mitigate or monitor these adverse impacts are presented in **Box 15.3.**

***Box 15.3:** Residual effects and recommendations for water*

Residual effects	Further details of the residual effect
Fluvial and pluvial flood risk	The majority of sites are located in Flood Zone 1, however, eight sites in the BLPSV-PC partially coincide with Flood Zones 2, 3a and 3b. Approximately half of the allocated sites in the BLPSV-PC are located in areas determined to be at low, medium and high risk of pluvial flooding. many of the policies and site proformas within the BLPSV-PC aim to ensure development proposals are directed towards areas of Flood Zone 1 on site and include SUDS to help manage surface water flooding. Therefore, a residual negligible impact on fluvial and pluvial flooding would be expected.
Reduction in water quality	Approximately 176.5ha of previously undeveloped land is proposed for development within the BLPSV-PC. The construction and occupation/operation of residential or employment development at these locations could potentially increase the risk of contamination and pollution of waterways to some extent. However, policies and site proformas within the BLPSV-PC would be expected to ensure the proposed development would not result in adverse impacts on water quality, and therefore, a residual negligible impact would be expected.
Increased water demand	The increased population within the borough would be expected to increase pressures on water demand, such as drinking water supply and wastewater treatment. The Buildings Regulations[119] require dwellings to achieve an efficiency standard of 125 litres of water per person per day. The Government also updated Part G of the Building Regulations, introducing an 'optional' requirement of 110 litres per person per day for new residential development. Behavioural changes would be expected to help reduce water demand in the future to some extent. Thames Water has prepared a Water Resources Management Plan (WRMP)[120] which considers population growth, climate change and the environment in its operating area over the next 25 years. The Thames Water Draft WRMP[121] seeks to maintain levels of services for customers through enhanced resilience to severe drought from 2030 and water efficiency.

[119] The Building Regulations 2010. Available at: http://www.legislation.gov.uk/uksi/2010/2214/contents/made [Date Accessed: 14/10/19]

[120] Our current plan (2014) Thames Water Available at: https://corporate.thameswater.co.uk/About-us/our-strategies-and-plans/water-resources/our-current-plan-wrmp14 [Date Accessed: 14/10/19]

[121] Thames Water Draft Water Resources Management Plan (2019) Available at: https://corporate.thameswater.co.uk/-/media/Site-Content/Your-water-future-2018/Statement-of-response/Statement-of-Response---Main-document.pdf?la=en [Date Accessed: 14/10/19]

Residual effects	Further details of the residual effect
	Increased pressures on water sources would be likely to be long-term and potentially irreversible. **Recommendations:** It is recommended that new residential developments aim to meet the higher water efficiency standard of 110 litres per person per day set out in the Buildings Regulations.
Impact on ecosystem services	The proposed development within the BLPSV-PC could potentially reduce the ability of the aquatic ecosystem to effectively filter water, provide the basis for vegetation to flourish, have benefits in regard to mental and physical wellbeing, and support biodiversity. However, policies within the BLPSV-PC aim to increase provision of green and blue infrastructure across the Plan area, which would be expected to mitigate potential adverse impacts due to the proposed development.

16 Cumulative effects assessment

16.1 About this chapter

16.1.1 Cumulative effects assessment (CEA) is the process of identifying and evaluating the effects that arise when the total significant effects of the Local Plan and assessed alongside known existing underlying trends and other plan and programmes.

16.1.2 Cumulative effects are different from effects that occur alone. Alone, the Local Plan may not result in residual adverse effects for a particular topic e.g. effects of urban sprawl on landscape character, but when considered cumulatively, may result in significant effects that require mitigation or monitoring. **Table 16.1** presents the likely cumulative effects of the BLPSV-PC in consideration with other plan and programmes as well as national trends.

Table 16.1: *Cumulative effects assessment of the BLPSV-PC*

SEA Topic	Residual effects of the BLPSV-PC	Likely evolution without the plan	Cumulative effect
Air	Reduction in air quality with implications for human health and/or ecosystems Increased pollutant emissions, including greenhouse gases	• Primary sources of air pollution in the UK include road transport, industry, imports and agriculture. These sources would not be expected to change, with or without the Plan. • In the absence of the Plan, development could potentially be located in close proximity to primary sources of air pollution. However, national trends indicate improvements in air pollution due to advances in technology in the long term. • The BLPSV-PC proposes several policies which would be likely to help increase the rate of sustainable transport uptake amongst residents. Without the Plan, it is uncertain the extent to which residents may opt for low emission or sustainable transport modes. • National trends in the increasing uptake of lower emission vehicle types, such as electric cars, would be likely to help limit road transport associated emissions in the Plan area. • In the absence of the Plan, Air Quality Management Areas (AQMAs) would still be designated and air quality in these areas would continue to be monitored. • The borough's Local Transport Plan would remain in place. • Road traffic congestion is expected to increase, especially along the motorways and through Maidenhead and Windsor.	Nationally, air quality improvements are in place, which include the banning of sales of petrol and diesel cars by 2040. Local and national policy promote the improvement of pedestrian and cycle networks, which would be likely to help reduce personal car use. However, there are traffic congestion issues within the Plan area which are expected to remain, and be exacerbated, by the estimated population increase in the borough.
Biodiversity	Threats or pressures to internationally/ European/ nationally and locally designated biodiversity sites Impacts on priority habitats and ancient woodland	• In the absence of the Plan, sites designated for their national and international biodiversity and/or geodiversity value would continue to benefit from legislative protection. • The Thames Basin Heaths SPD[122] would remain a material consideration, setting out the strategy for the provision of SANGS as well as access management and monitoring at the SPA, which would be expected to help manage the designated site, with or without the Plan. • The Berkshire Biodiversity Strategy 2014 – 2020[123] aims to increase the area of priority habitats in Berkshire, but trends in habitat creation are currently unknown. • Biodiversity net gain at development sites would be expected, due to policies set out in the NPPF.	There are numerous biodiversity sites within the borough, however, the integrity of many habitats is subject to degradation nationally and internationally. Although the BLPSV-PC aims to maintain and enhance biodiversity sites, it is uncertain if the proposed development within the BLPSV-PC would adversely impact some biodiversity features when considered together at a landscape

[122] Royal Borough of Windsor and Maidenhead (2010) Thames Basin Heaths Special Protections Area: Supplementary Planning Document. Available at: https://www3.rbwm.gov.uk/info/201039/non-development_plan/458/biodiversity_and_thames_basin_heath_spa/2 [Date Accessed: 02/10/19]

[123] Berkshire Local Nature Partnership (2014) The Natural Environment in Berkshire: Biodiversity Strategy 2014 – 2020. Available at: https://berkshirelnp.org/index.php/what-we-do/strategy/biodiversity-action-plan [Date Accessed: 02/10/19]

SEA Topic	Residual effects of the BLPSV-PC	Likely evolution without the plan	Cumulative effect
	Provision of green and blue infrastructure	• In the absence of the Plan, the NPPF, and its policies relating to biodiversity, would continue to be material consideration in planning decisions. It is uncertain if development proposals would voluntarily adopt additional biodiversity enhancement measures. • There could potentially be adverse impacts on local biodiversity features, in particular non-designated sites and priority habitats, due to development, including direct loss or damage, recreational disturbance and decreases in air quality.	scale. Site-based approaches to nature conservation can fail to identify landscape ecological considerations.
Climatic factors	Increased pollutant emissions, including greenhouse gases Provision of green and blue infrastructure	• Per capita CO_2 emissions in RBWM are expected to decrease in the future, based on previous trend data. • International and national greenhouse gas emission reduction targets would continue to promote a reduction in emissions in the absence of the Plan. • Technological advances, which may include renewable energies, electric vehicles and efficient electricity supplies, would be expected to occur in the absence of the Plan. • In the absence of the Plan, it is uncertain if new residents would be located in close proximity to essential services and if new residents would be encouraged to reduce reliance on personal car use.	Climate change is an international issue. The proposed development within the BLPSV-PC and subsequent increase in population would be expected to result in an increase in greenhouse gas emissions. Despite the numerous policies in the BLPSV-PC, it unlikely that net zero carbon emissions will be achieved within the plan period. This issue requires careful monitoring and the preparation of a climate change mitigation plan is recommended.
Cultural Heritage	Alter character and/ or setting of heritage assets	• In the absence of the Plan, designated heritage assets would continue to benefit from legislative and policy protection. • Heritage assets, including underground archaeological features, would be likely to be discovered in the future, with or without the Plan.	RBWM has a rich cultural heritage. Development proposed within the BLPSV-PC would not be expected to cause significant harm to these assets.
Human health	Reduction in air quality with implications for human health Accessibility to services and facilities Facilitating healthy and active lifestyles Facilitating community cohesion	• The percentage of children in low income families is expected to decrease. • In the absence of the Plan, it is uncertain if residents of new developments would be located in areas with poor access to essential health services. • Without the Plan, it is uncertain if existing public green spaces would be maintained and enhanced, to encourage residents to live healthy and active lifestyles.	The heath of residents within the borough is generally good. The BLPSV-PC aims to promote walking and cycling, increase provision of green and open spaces and improve access to community facilities. In line with national trends, air pollution within the Plan area would be likely to decrease in the long term. Short term adverse effects are likely to remain within the plan period.

SEA Topic	Residual effects of the BLPSV-PC	Likely evolution without the plan	Cumulative effect
Landscape	Alteration of the landscape character Alteration of views Urban sprawl Tranquillity	• In the absence of the Plan, the London Metropolitan Green Belt would continue to benefit from policy protection set out in the NPPF. • Pressure from development proposals located in the open countryside of RBWM would be likely to increase, which could potentially have negative impacts on the quality and distinctiveness of the Plan area. • The Landscape Character Assessment SPD would still be a material consideration without the Plan in place. • It is uncertain the extent to which development proposals would seek to conserve and enhance the local landscape character under an appeal-led system. • The setting of the Chilterns AONB would still be protected by legislation, policies set out in the NPPF, the Chilterns AONB Management Plan and the PPG.	The National Design Guide[124] sets out key components for good design which would be likely to help reduce potential impact on the landscape. The Landscape Character Assessment (2004) SPG offers guidance regarding the key characteristics of the landscape. 176.5ha of development in the BLPSV-PC will take place on previously undeveloped land, leading to a likely negative alteration to landscape character. The majority of the proposed development within the BLPSV-PC is located within the urban settlements of Windsor, Maidenhead and Ascot. The development proposed could result in a loss of tranquillity in the surrounding landscape as a consequence of increases in noise and lighting.
Population	Increased demand on local services and facilities	• The population across the Plan area is expected to continue to increase. This is likely to place greater pressure on the capacity of key services and amenities, including health and leisure facilities, employment opportunities, educational establishments and housing. • Notable offences recorded by the police is expected to decrease within the borough. • Without the Plan, there could be less opportunity to enhance community benefits (such as community hubs) associated with Plan-led housing proposals.	The BLPSV-PC would be expected to have a cumulative positive impact on population. The average house price in RBWM is approximately double that of England's average. The BLPSV-PC aims to provide affordable homes. The issue

[124] MHCLG (2019) National Design Guide, Planning practice guidance for beautiful, enduring and successful places. Available at: https://www.gov.uk/government/publications/national-design-guide [Date Accessed: 14/10/19]

SEA Topic	Residual effects of the BLPSV-PC	Likely evolution without the plan	Cumulative effect
	Accessibility to services and facilities Provision of housing to meet local need Provision of employment opportunities	• An appeal-led development scenario is unlikely to improve sustainable access routes to schools. • Road infrastructure improvements, such as smart motorways, are expected to continue in the absence of the Plan. • Public rights of way are expected to be continually improved through the Public Rights of Way Management and Improvement Plan and the Waterways Project. These positive effects are likely to mostly affect recreational users. • The BLPSV-PC proposes several policies which would be likely to increase the uptake of sustainable transport use amongst residents, which would be likely to help reduce congestion on local roads. In the absence of the Plan, it is uncertain the extent to which residents may opt to use sustainable transport modes. • In the absence of the Plan, the borough's Local Transport Plan[125] will still be implemented, which would be likely to have a positive impact on the local road network, relieving congestion and improving public transport across the Plan area. • Without the Plan, it is uncertain if future housing provision would satisfy local needs in terms of type, cost and location. • In the absence of the Plan, there could potentially be a reduced ability to refine the housing stock to meet the changing demands of existing residents such as the provision of elderly specific housing accommodation. • House prices are expected to continue to increase within the borough. • Continuing transformation of existing employment land into high quality employment land would be expected in the absence of the Plan. • The number of jobs in RBWM is expected to increase based on current trend data. • The number of businesses in the borough is expected to increase.	of the affordability of homes is likely to remain There is a relatively strong economy within RBWM. This would be expected to improve and grow following the implementation of the BLPSV-PC. The BLPSV-PC aims to protect existing services and facilities, with positive effects.
Material Assets	Increased household waste generation	• It is thought likely that without the Plan, rates of recycling waste per capita will rise in the Plan area in line with national and international trends and targets. • The extent to which development may arise in the Plan area without the Plan is uncertain. However, an increase in the local population would be expected and it is therefore thought to be likely that, without the Plan, net waste generation in the Plan area will rise to some extent.	Increased population associated with the BLPSV-PC would be expected to increase waste generation to some extent. Although nationally, recycling rates are increasing, it is uncertain if this would help decrease waste generation within the borough.

125 Royal Borough of Windsor and Maidenhead (2012) Local Transport Plan 2012 – 2026. Available at: https://www3.rbwm.gov.uk/downloads/download/90/local_transport_plan_documents [Date Accessed: 02/10/19]

SEA Topic	Residual effects of the BLPSV-PC	Likely evolution without the plan	Cumulative effect
		• The emerging Joint Waste and Minerals Plan for Berkshire would be expected to control and manage waste and mineral extraction throughout RBWM in the absence of the Plan.	
Soil	Loss of soil resources, including BMV land Increased demand on ecosystem services	• Soil erosion and soil loss are occurring at significant rates throughout the country due to agriculture, climate change and urbanisation. Without the Plan, the extent of development on previously undeveloped greenfield land is uncertain. • Without the Plan, it is uncertain what percentage of ecologically and agriculturally important soils would be lost to development across the Plan area.	Nationally, rates of soil erosion are increasing. The BLPSV-PC would be expected to result in the loss of approximately 176.5ha of previously undeveloped land. Together, this would be expected to have cumulative adverse effect on soil resources.
Water	Fluvial and pluvial flood risk Reduction in water quality Increased water demand Increased demand on ecosystem services	• The risk of flooding is likely to be exacerbated in the Plan area as a result of climate change, but flood risk would be continued to be managed through policies and guidance within the NPPF, PPGs and River Basin Management Plans. • The increased risk of surface water flooding would depend on the size, nature and extent of non-porous built surface cover in the Plan area in the future. • The Plan area's population will rise, with or without the Plan, and net water demand in the Plan area would be likely to rise as a result. Water Resource Management Plans would continue to plan for future trends in water supply, demand and environmental quality. • It is uncertain how water efficiency per capita may be affected in the absence of the Plan. • Policies within the NPPF would also be expected to help protect against the worsening of water quality across the Plan area. • Water abstraction, consumption and treatment in the local area will continue to be managed by the Environment Agency and water companies through the River Basin Management Plans, Water Resource Management Plans and Catchment Abstraction Management Strategy in line with the EU Water Framework Directive.	A proportion of RBWM is located within Flood Zones 2, 3a or 3b. National policies and guidance and BLPSV-PC policies would help to ensure development proposals do not exacerbate flood risk in the Plan area. The increased population in the borough would be expected to increase demand on water supply.

17 Conclusions and recommendations

17.1 How the SA has influenced the Plan

17.1.1 The SA has been an influential tool throughout the Plan-making process to date. It works on an iterative basis. The plan makers identify various options at different stages of the plan-making process which are subsequently appraised through the SA process using the methodology in **Chapter 4**. This latest stage of appraisal has concentrated on a refinement of the submission version of the Local Plan (BLPSV) which was submitted to the Planning Inspectorate during January 2018 (see **Table 2.1**).

17.1.2 The process of appraisal is sequential in nature: an assessment of impacts is made, the mitigation hierarchy is applied, and the assessment of effects is revisited, leading to the identification of residual effects. The mitigation hierarchy is an important element of the assessment process. It considers firstly if the identified adverse effect can be avoided and if not, can it be adequately mitigated to reduce the effect.

17.1.3 SA is necessarily a high-level assessment process, often using secondary data at a scale which is plan-based to make assessments about smaller-scale sites. This can introduce uncertainty to the process (see assumptions in **Table 4.6**). The application of the precautionary principle means that when doubt prevails, a worst-case scenario is identified.

17.1.4 The general picture of how development takes place in the UK is either through what is loosely known as (1) an appeal-led system (unplanned development for which permission is secured on appeal to the Planning Inspectorate) or (2) a plan-led system. Paragraph 15 of the NPPF is clear that '*the planning system should be genuinely plan-led*'.

17.1.5 The predicted evolution of the baseline without the Plan (see **Table 3.1**) shows that there are already a number of important trends, some of which are negative in nature. These include matters such as air quality, greenhouse gas emissions and flood risk; events associated with a changing climate. The table suggests that these are likely to continue without the Plan, which, for the purposes of the assessment, is the so-called 'appeal-led' system.

17.1.6 The BLPSV-PC offers a means of structured planning which facilitates sustainable development. It has been prepared to comply with paragraph 16 of the NPPF which states that "*plans should be prepared with the objective of contributing to the achievement of sustainable development*" which is also a legal requirement placed on local planning authorities when exercising their plan-making functions under section 39(2) of the Planning and Compulsory Purchase Act 2004.

17.1.7 Whilst the Plan proposes a development strategy which includes the provision of at least 14,240 new homes, it also includes a comprehensive suite of measures in the form of planning policies which aim to reduce and manage some of the identified adverse effects associated with development at this scale. In particular, the BLPSV-PC plays an important role in introducing mitigation. The SA has helped suggest mitigation which has subsequently been incorporated into the Plan.

17.1.8 Sustainability performance has been enhanced as a result of revising policies through a process of continual improvement to help reduce identified adverse effects. Recommendations for mitigation or enhancement measures have been considered throughout the plan making and SA process. Suggestions for amendments to policies and/or site proformas within the BLPSV-PC have been made to the Council, for example through the assessment of reasonable alternative development sites (see **Appendix D**) and through an internal Advice Note[126]. The Advice Note provided specific recommendations to include in each policy and site proforma, with measures to mitigate some of the potential adverse impacts that had been identified during the SA process. These recommendations were incorporated into the final versions of the policies and site proformas. For example, the SA process recommended increased levels of green infrastructure provision and improved access to sustainable transport options.

17.2 Residual effects following mitigation

17.2.1 The SA has assessed the site allocations and policies proposed in the BLPSV-PC using the methodology in **Chapter 4**. A number of residual effects have been identified and these are discussed in **Chapters 7 to 15**. Proposals in the BLPSV-PC vary in terms of their sustainability performance with likely positive impacts expected on some SA Objectives and adverse impacts on others.

17.2.2 The SA has identified likely sustainability impacts of BLPSV-PC proposals alone and in-combination. The BLPSV-PC is anticipated to result in a range of positive impacts on sustainability, which are highlighted throughout the policy and site allocation assessments in **Appendices B and C** and are summarised in **Table 17.1**.

17.2.3 The mitigation proposals presented in the BLPSV-PC provide positive planning mechanisms for delivering sustainable development where the Plan is able to reasonably address the issue. It is recognised that the Plan cannot fully address the sustainability effects of national and international trends such as increased frequency of storm events associated with climate change.

[126] Internal Advice Note on recommended mitigation measures prepared by Lepus for the Council (26th September 2019).

17.2.4 In some cases, for example residual effects associated with household waste, landscape and biodiversity have been derived through the application of the precautionary principle.

17.2.5 The identified residual adverse effects (see **Table 17.2**) are generally minor but some are associated with greater levels of uncertainty and potentially could be considered to be greater in magnitude, for example residual adverse effects associated with air quality and climate change. These require careful attention outside of and beyond the Local Plan; notwithstanding such uncertainties, these aspects are included in the recommendations for monitoring. Whilst the Plan includes positive mitigation measures, the Plan alone cannot address these matters in their entirety; these are effects that are predicted to happen with or without the Plan. The Plan includes measures to reduce these effects, however, when considered cumulatively, a residual adverse effect would still be likely to occur.

Table 17.1: *Likely residual positive sustainability effects of the BLPSV-PC*

Residual positive effects	
1	**Housing provision** The proposed development of 14,240 dwellings across the Plan area would be expected to make a significant and positive contribution towards meeting the identified local housing need. Policies within the BLPSV-PC would be expected to ensure that residential developments meet the needs of the local community, including affordable housing and gypsy and traveller accommodation.
2	**Employment opportunities** The proposed development of 11,200 new employment opportunities through development allocations within the BLPSV-PC, would be expected to make a significant and positive contribution to the employment needs of residents and to the local economy. Policies within the BLPSV-PC help to ensure that a range of types and sizes of employment land are available.
3	**Green Network** The BLPSV-PC aims to ensure that development proposals incorporate green and blue infrastructure where possible. Although the proposed development would be expected to result in the loss of greenfield land and associated biodiversity to some extent, policies and site proforma information help to ensure that green and blue infrastructure provisions are retained and enhanced across the Plan area.
4	**Transport and Accessibility** Policies and site proforma information within the BLPSV-PC would be anticipated to improve residents' access to sustainable transport options, including frequent bus services and improved pedestrian and cycle networks. This would be likely to help improve access to local services and facilities and help reduce personal reliance on car use.
5	**Physical and Mental Health** Although some new residents within the borough could potentially be located outside a sustainable distance to healthcare facilities, policies within the BLPSV-PC would be likely to help improve access to these services via sustainable transport routes. In addition, the increased provision of open space and green infrastructure within

Residual positive effects	
	the borough would be expected to help facilitate healthy and active lifestyles, increasing access to space for physical exercise as well as areas with mental wellbeing benefits.
6	**Community Cohesion** The site allocations and policies within the BLPSV-PC would be likely to increase the provision of community facilities within the Plan area. This would be expected to help facilitate vibrant and interactive communities, and lead to a greater sense of place within settlements.

__Table 17.2:__ Likely residual adverse sustainability effects of the BLPSV-PC

Residual adverse effects	
1	**Reduction in air quality with implications for human health and/or ecosystems** Due to the volume of development proposed, an increase in traffic flows and subsequent reduction of air quality would be expected to have residual adverse effects on human health. In addition, many new residents could potentially be located within 200m of a main road. Cumulatively, this would be expected to result in a reduction of local air quality, with implications for human and ecosystem health.
2	**Increased pollutant emissions, including greenhouse gases** An increase in pollutants including greenhouse gases would be expected following the development proposed within the BLPSV-PC. The introduction of 33,606 residents would be expected to increase traffic volumes and energy demand, which would be expected to result in an increase of pollutant emissions.
3	**Threats and pressures to designated biodiversity sites** In the absence of the completed HRA report, it is uncertain if the proposed development within the BLPSV-PC would result in adverse impacts on designated biodiversity sites in regard to public access and disturbance, hydrological change and air quality. As a precautionary approach, a residual adverse effect on surrounding internationally designated biodiversity sites would be likely as a result of the proposed development.
4	**Increased greenhouse gas emissions** The proposed development of 14,240 dwellings within the BLPSV-PC would be expected to increase carbon emissions in the Plan area by 22.5% (based on 2017 estimates). This increase would be expected to exacerbate the impacts of climate change within the borough.
5	**Alteration of the landscape character** The introduction of built form which does not compliment and respect the local distinctive character of existing landscapes and settlements would be likely to result in adverse impacts on the local landscape character. Some development proposals could potentially result in the loss of locally important landscape features, such as trees, hedgerows and walls.
6	**Loss of tranquillity** The majority of the proposed development within the BLPSV-PC is located within the urban settlements of Windsor, Maidenhead and Ascot. Development proposals could result in a loss of tranquillity of the surrounding landscape as a consequence of increases in noise and lighting.
7	**Increased household waste generation** The proposed development within the BLPSV-PC would be expected to increase household waste generation within the Plan area. Although policies and site proformas within the BLPSV-PC aim to increase recycling in the borough, there is little scope to reduce the quantity of waste generated per household.

Residual adverse effects	
8	**Loss of soil resources, including BMV land** Approximately 176.5ha of development allocated within the BLPSV-PC is located on previously undeveloped land. This would be expected to result in the permanent and irreversible loss of ecologically, and potentially agriculturally, important soil resources.
9	**Impact on soil Ecosystem Services** Soil provides a range of essential services to the local area, including nutrient cycling, abating flood risk, filtering water, filtering air, carbon storage and providing the basis for vegetation to flourish. The scale of development proposed within the BLPSV-PC would be expected to increase pressure on essential ecosystem services.
10	**Increased demand for water** In accordance with the 'Thames catchment abstraction licensing strategy'[127], there is no water resource available for licensing in the Thames catchment area. The introduction of 33,606 new residents would be expected to result in increased pressure on this already exhausted water resource.

17.3 Monitoring

17.3.1 Article 10 (1) of the SEA Directive states "member States shall monitor the significant environmental effects of the implementation of plans and programmes in order, inter alia, to identify at an early stage unforeseen adverse effects, and to be able to undertake appropriate remedial action."

17.3.2 The purpose of monitoring is to measure the environmental effects of the Plan as well as its success against its objectives. However, monitoring can place a heavy burden on financial and human resources and it may therefore be practical to focus on monitoring residual adverse effects and to build on existing monitoring systems.

17.3.3 Monitoring the impacts of the Local Plan should seek to answer:

- Were the likelihood of sustainability impacts identified in the SA process accurate?
- Is the Local Plan successful in achieving its desired sustainability objectives?
- Are mitigation measures performing as expected?
- Are there any unforeseen adverse impacts of the Local Plan, and are these within acceptable limits or is remedial action required?

[127] Environment Agency (2014) Thames catchment abstraction licensing strategy. Available at: https://www.gov.uk/government/publications/thames-catchment-abstraction-licensing-strategy [Date Accessed: 03/10/19]

17.3.4 Monitoring proposals are set out in **Table 17.3**.

Table 17.3: *Proposals for monitoring adverse sustainability impacts of the BLPSV-PC*

Residual adverse effects	Receptor	Scale and frequency	Indicator
Reduction in air quality	Traffic flows on A roads and motorways	Annually, along key routes	Traffic flow increases annually e.g. DfT AADT counts[128]
	Rates of public transport uptake	Annually, Plan area wide	Rates of uptake declining or showing no signs of improvement
Increased emissions of greenhouse gases	Proportion of energy from renewable sources and carbon footprint of the borough	Annually, Plan area wide	Annual increases in the use of coal and oil sourced energy e.g. DBEIS statistics on local authority energy consumption[129]
Alter the local landscape character	Loss of key landscape features due to development	Annually, Plan area wide	Annual increases in quantity of development approved in sensitive LCAs
Loss of tranquillity	Change to the *"quality of calm"*	Annually, within the designated landscapes	Annually, there is increased disturbance resulting in a loss to tranquil areas
Increased household waste generation	Proportion of household waste recycled	Annually, Plan area wide	Recycling rates in the borough increasing annually.
Loss of best and most versatile land	Use of BMV land for alternative use, such as developments	Annually, Plan area wide	Annual increases of development on BMV land
Loss of soil resource	Increased development on previously undeveloped land	Annually, Plan area wide	Quantity of soil lost to development increases annually
Increased stress of water resources	Increased demand on the water resource	Annually, Plan area wide	Increased use of a scarce water resource can lead to an inability to meet demand locally
Increased pressure on ecosystem services	Quality and quantity of habitats and environment resources	Annually, particularly within important biodiversity sites	Annually there is an increased demand for ecosystem services as population growth results in a growing need for housing, food and energy.

[128] Department for Transport (2018) Road Traffic Statistics. Available at: https://www.dft.gov.uk/traffic-counts/index.php [Date Accessed: 02/10/19]

[129] Department for Business, Energy and Industrial Strategy (2019) Total final energy consumption from 2003 to 2017 at a regional (NUTS1) and a local (LAU1 – formally NUTS4) level. Available at: https://www.gov.uk/government/statistical-data-sets/total-final-energy-consumption-at-regional-and-local-authority-level [Date Accessed: 02/10/19]

Glossary

Accessibility	This is the ability for people to travel around an area and reach facilities or locations. This includes the elderly, young, disabled or those carrying luggage.
Agricultural Land Classification (ALC)	The Department for Environment, Food and Rural Affairs (DEFRA's) system of classifying agricultural land quality. Soil is graded from best to worst, numbered 1 to 5, with Grade 3 divided into two sub-grades (3a and 3b).
Air Quality Management Area (AQMA)	An area which is declared by a Local Authority where it is unlikely that Air Quality Objectives will be achieved.
Amenity	Positive elements that contribute to the character and sense of place of a location.
Ancient Woodland	Woodland that has existed in a consistent state since 1600 or earlier in England, Wales and Northern Ireland (1750 in Scotland).
Area of Outstanding Natural Beauty (AONB)	Sites in England, Wales and Northern Ireland designated to conserve and enhance the natural beauty of the area which comprises the area's distinctive landscape character, biodiversity, geodiversity, historic and cultural environment.
Baseline Conditions	The conditions that would pertain in the absence of the proposed project at the time that the project would be constructed/operated/decommissioned.
Best and Most Versatile Land (BMV)	Land in Grades 1, 2 and 3a of the Agricultural Land Classification.
Biodiversity	The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part. It includes diversity within and between species, and between ecosystems.
Buffer Zone	An area or zone that helps to protect a habitat from damage, disturbance or pollution.
Carbon Sink	A natural or artificial reservoir viewed in terms of its ability to absorb carbon-containing compounds, such as carbon dioxide.
Character	Relating to the appurtenance of a location in terms of its landscape, layout of streets or open spaces, or historic environment.
Climate Change	A change in the climate of a region over time due to natural forces or human activity. In the context of the UN Framework Convention on Climate Change, it is the change in climate caused by higher levels of greenhouse gases in the atmosphere due to human activities as well as natural climate changes.
Climate Change Adaptation	Changes to natural or human systems in response to actual or estimated climatic factors or their effects, such as increased rainfall and temperatures.
Climate Change Mitigation	Actions used to reduce the impact of human activity on the climate, such as reducing greenhouse gas emissions.
Coalescence	The merging of separate towns or villages due to development.

Conservation Area	Areas of special architectural or historic interest, the character of which should be preserved. These are designated by the local planning authority.
Contaminated Land	Land that has been polluted and is therefore unsafe for development unless the contamination is removed.
Country Park	Country Parks are statutorily declared and managed by local authorities in England and Wales under the Countryside Act. They are primarily intended for recreation and leisure opportunities close to population centres and do not necessarily have any nature conservation importance.
Cumulative Impact	Impacts caused either by a number of separate developments in the same area or continuous activity over time that may have an increased impact on the local environment.
Cycle Network	A network located both on and off roads to facilitate safer travel by bicycle.
Density	In terms of residential development, the number of dwellings (or rooms) per hectare.
Ecological Network	Linkages between biodiversity features and habitats.
Ecosystem Services	Benefits that people obtain from ecosystems or their direct and indirect contributions to human well-being.
Emissions	In the context of the atmosphere, gases or particles released into the air that can contribute to global warming or poor air quality.
Energy Efficiency	Actions to save fuels, for example better building design, changing production processes, developing better transport policies, using better road vehicles and improving insulation and double glazing in homes.
Flood Plain	Where water flows in times of flood, or would flow but for the presence of flood defences.
Fragmentation	The breaking up of a habitat or ecosystem into smaller parcels with a consequent impairment of functioning.
Geodiversity	The range of rocks, minerals, fossils, soils and landforms.
Green Belt	An area of land, largely rural in character, which is adjacent to the main urban areas and which is protected from development by permanent restrictions on building.
Green Infrastructure (GI)	A strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services.
Green Network	The linking together of natural, semi-natural and man-made open spaces to create an interconnected network. This may include (but is not limited to) designated biodiversity sites, Local Green Spaces, waterways, and public greenspaces.
Green Space	A patch of vegetated land within the urban fabric for predominantly recreational use.
Greenfield	Land on which no development has previously taken place unless the previous development was for agriculture or forestry purpose or, the remains of any structure or activity have blended into the landscape.

Greenhouse Gas (GHG)	A gas in an atmosphere that absorbs and emits radiation within the thermal infrared range, usually water vapour, carbon dioxide, methane, nitrous oxide, ozone chlorophluorocarbons and hydrophluorocarbons.
Groundwater	Water which is below the surface of the ground and in direct contact with the ground or subsoil.
Habitat Regulations Assessment (HRA)	A Habitats Regulations Assessment (HRA) refers to the several distinct stages of Assessment which must be undertaken in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended) and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) to determine if a plan or project may affect the protected features of a habitats site before deciding whether to undertake, permit or authorise it.
Health receptor	The criteria assessed with regard to human health, e.g. leisure centres, NHS hospitals, GP surgeries, access to greenspace and access to public footpaths.
Heritage Asset	A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage asset includes designated heritage assets and assets identified by the local planning authority (including local listing).
Historic Environment	All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.
Infrastructure	Basic services necessary for development, such as, roads, electricity, sewerage, water, education and healthcare facilities.
Land Use	Describes the social and economic purposes for which land is managed.
Landscape	The traits, patterns and structure of a specific geographic area, including its biological composition, its physical environment and its anthropogenic or social patterns. An area where interacting ecosystems are grouped and repeated in a similar form.
Landscape Character	The recognisable and consistent pattern of features in a certain landscape, distinguishing one landscape from another, giving a locality its sense of place.
Listed Building	A protected structure recorded on the Statutory List of Buildings of Special Architectural or Historic Interest. Graded I (highest quality), II* or II, which are listed in a national register.
Local Nature Reserve (LNR)	Local Nature Reserves (LNRs) are a statutory designation made under Section 21 of the National Parks and Access to the Countryside Act 1949 by principal local authorities. Parish and Town Councils can also declare LNRs, but they must have the powers to do so delegated to them by a principal local authority.
Local Plan	Local plans are prepared by the Local Planning Authority (LPA), usually the Council or the national park authority for the area. The plan for the future development of the local area, drawn up by the local planning authority in consultation with the community. In law this is described as the development plan documents adopted under the Planning and Compulsory Purchase Act 2004. Current core strategies or other planning policies, which under the

	regulations would be considered to be development plan documents, form part of the Local Plan. The term includes old policies which have been saved under the 2004 Act.
Local Planning Authority (LPA)	The body responsible for carrying out statutory planning functions.
Local Wildlife Site (LWS)	Sites which have a local designation for their nature conservation value.
Mineral Safeguarding Area (MSA)	Areas designated by Minerals Planning Authorities which cover known deposits of minerals which are desired to be kept safeguarded from unnecessary sterilisation by non-mineral development.
Mitigation	Measures taken to reduce adverse impacts, e.g. the provision of suitable planting to screen a development.
National Nature Reserve (NNR)	A National Nature Reserve (NNR) is the land declared under the National Parks and Access to the Countryside Act 1949 or Wildlife and Countryside Act (1981) as amended. These are protected and managed areas which are nationally designated as key places for wildlife and natural features.
National Park	Areas of relatively undeveloped and scenic landscape that are designated under the National Parks and Access to the Countryside Act (2016).
National Planning Policy Statement (NPPF)	Updated in June 2019, this document sets out the government's planning policy guidance on various topics that can constitute a material consideration in determining planning applications.
National Trail	Long distance routes for walking, cycling and horse riding.
Open Space	An area of undeveloped land or water that may offer important opportunities for sport and recreation and can act as a visual amenity.
Plan area	The geographic area covered by the plan. This generally covers local government jurisdictional boundaries.
Planning Practice Guidance (PPG)	The National Planning Practice Guidance adds further context to NPPF, and it is intended that the two documents should be read together.
Pollution	The introduction of contaminants into the natural environment that cause adverse change.
Precautionary Principle	Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.
Previously Developed Land (PDL)	Land which is, or has been, occupied by a permanent (non-agricultural) structure and associated infrastructure, including the area of land attached to a structure as well as the structure itself.
Public Greenspace	Areas of undeveloped landscape within a settlement, that are partially or wholly covered with grass, trees, shrubs or other vegetation.
Public Rights of Way (PRoW)	Paths within England and Wales on which the public have a legally protected right to pass and re-pass.

Ramsar Sites	Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. Originally intended to protect sites of importance especially as waterfowl habitat, the Convention has broadened its scope over the years to cover all aspects of wetland conservation and wise use, recognising wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities.
Registered Parks and Gardens	A national designation by Historic England of a park or garden of special historic interest. Graded I (highest quality), II* or II, which are listed in a national register.
Scheduled Monument (SM)	Archaeological remains of national importance which are legally protected by the Ancient Monuments and Archaeological Areas Act 1979 and listed on a schedule.
Secondary impacts	Impacts that could potentially occur indirectly following the implementation of the Local Plan.
Setting	The place in which something is set, particularly in terms of the surroundings of a Listed Building.
Site of Special Scientific Interest (SSSI)	A conservation designation denoting a protected area of land in the UK. Sites can be protected for their biological/ecological interest (Biological SSSIs) and/or their geological interest (Geological SSSIs).
Source Protection Zone (SPZ)	The Environment Agency identifies Source Protection Zones to protect groundwater (especially public water supply) from developments that may damage its quality.
Special Area of Conservation (SAC)	SACs are designated under the EC Habitats Directive. SACs are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive.
Special Protected Area (SPA)	SPAs are classified by the UK Government under the EC Birds Directive. SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.
Stakeholder or Interested Party	Any person, group or business that has an interest or will potentially be affected by a particular activity, plan or project.
Statutory Body	A government-appointed body set up to give advice and be consulted for comment upon development plans and planning applications affecting matters of public interest. This includes Historic England, Environment Agency and Natural England.
Strategic Environmental Assessment (SEA)	A process that is a requirement under certain plans and programmes under the SEA Directive and associated Environmental Assessment of Plans and Programmes Regulations 2004. The Directive seeks to ensure that environmental considerations are taken into account alongside economic and social considerations in the development of a plan / programme.
Submission	When a Development Plan Document, such as a Local Plan, is submitted to the Secretary of State for independent examination.
Surface Water (Pluvial) Flooding	Flooding caused by rainfall which occurs due to water ponding on, or flowing over, the surface before it reaches a drain or watercourse

Sustainability Appraisal (SA)	A systematic process required by the Planning and Compulsory Purchase Act 2004 and incorporating the requirements of the SEA Directive, aimed at appraising the social, environmental and economic effects of plan strategies and policies and ensuring that they accord with the objectives of sustainable development.
Sustainable Drainage Systems (SuDS)	A sequence of management practices and control measures designed to mimic natural drainage processes by allowing rainfall to infiltrate, and by attenuating and conveying surface water runoff slowly at peak times.
Synergistic impacts	When two separate impacts combine to form a third impact. These may be greater than the sum of the individual impacts.
Tranquillity	Remote from the visual or audible intrusion of development and/or traffic and unspoilt by urban surroundings.
Transport receptor	The four criteria assessed to determine transport and accessibility for local residents; Bus stops, railway stations, PRoW/cycle network and the road network.
Urban Sprawl	The unplanned and uncontrolled growth of urban areas into the surrounding countryside.

Habitat Regulations Assessments

Sustainability Appraisals

Strategic Environmental Assessments

Landscape Character Assessments

Landscape and Visual Impact Assessments

Green Belt Reviews

Expert Witness

Ecological Impact Assessments

Habitat and Ecology Surveys

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