

7 Socio-economics

7.1 Introduction

7.1.1 This Chapter provides an assessment of the likely significant socio-economic effects from the Proposed Development based on the characteristics of the Site and surrounding area as well as the key parameters of the Proposed Development detailed in **Chapter 2 – Site and Surrounding Area** and **Chapter 3 – The Proposed Development** respectively.

7.1.2 In accordance with Regulation 18(5) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, as amended, a statement outlining the relevant expertise and qualifications of competent experts appointed to prepare this ES is provided in **Appendix A.4**.

7.1.3 The appendices associated with this Chapter are:

- **Appendix B.1 – Figures:**

- Figure 7.1 - Housing Market Study Area;
- Figure 7.2 – Labour Market Study Area;
- Figure 7.3 – Education Study Area – Nurseries
- Figure 7.4 – Education Study Area – Primary Schools;
- Figure 7.5 – Education Study Area – Secondary Schools and Higher Education;
- Figure 7.6 – Healthcare Study Area;
- Figure 7.7 – Recreation and Public Access Study Area – Public Access; and
- Figure 7.8 – Recreation and Public Access Study Area – Recreation.
- **Appendix B.2 – Detailed Policy Context;** and
- **Appendix B.3 – Detailed Baseline Conditions.**

7.2 Policy Context, Legislation, Guidance, and Standards

7.2.1 The overarching planning and policy framework applicable to this EIA for the Proposed Development is outlined in **Chapter 6 – Planning and Policy Context**. The below provides a summary of the policies of specific relevance to this socio-economic assessment. To review the full extent of the policy assessment undertaken to inform this chapter, please refer to **Appendix B.2 – Detailed Policy Context**.

7.2.2 The Site benefits from longstanding policy support for residential-led mixed-use development, as evidenced by its inclusion within the allocated Cribbs Patchway New Neighbourhood ('CPNN'), and has been identified as strategically important for its contributions to SGC's housing land supply, economic development land supply and regeneration initiatives.

7.2.3 The Cribbs Patchway New Neighbourhood Development Framework Supplementary Planning Document (SPD)¹ (SGC, 2014) was adopted in March 2014. The SPD provides for the delivery of 5,700 new homes across the CPNN and 50 ha of employment land (30 ha of which

¹ SGC, 2014, CPNN Development Framework SPD

will be “*directly usable for employment purposes*”) within the Filton Enterprise Area² (SGC, 2014).

7.2.4 Policy CS26 states that the CPNN “*will be a major focus of redevelopment and regeneration*” and that “*provision will be made for approximately 5,700 dwellings in new mixed use communities, around 50 ha of employment land, and greater diversity of commercial uses including additional retail, together with supporting infrastructure and facilities*”³ (SGC, 2013). The detailed requirements of Policy CS26 are set out in SPD, and the requirements of relevance to the Site are summarised in ‘Supplementary Planning Guidance’ subheading within **Appendix B.2 – Detailed Policy Context**.

7.2.5 This assessment has been carried out in accordance with relevant principles and requirements contained within the following policy and guidance documents:

- National Planning Policy Framework (NPPF) (MHC&LG, 2021);
- West of England Combined Authority (WECA) Spatial Development Strategy (SDS) (WECA, 2022);
- West of England Local Housing Needs Assessment (LHNA) (ORS, 2021);
- West of England Employment Land Spatial Needs Assessment (ELSNA) (Atkins, 2021);
- South Gloucestershire Local Plan Core Strategy 2006 - 2027 (Core Strategy) (SGC, 2013);
- South Gloucestershire Local Plan Policies, Sites and Places Plan (PSP) (SGC, 2017);
- Cribbs Patchway New Neighbourhood Development Framework Supplementary Planning Document (SPD) (SGC, 2014); and
- South Gloucestershire Local Plan 2020 (SGC, 2022).

7.2.6 The South Gloucestershire Infrastructure Delivery Plan (IDP) is of relevance. It is the evidence base document which underpins the spatial strategy of the Core Strategy and PSP by setting out the required infrastructure needs of strategic developments, including the CPNN, and the standards against which relevant elements of the Proposed Development should be assessed.

7.2.7 It is also acknowledged that the extant planning consent was approved, subsequent to the SPD and the IDP, and has an attached S106 Agreement and a site specific CPNN Framework Agreement which provide the legal, updated basis for the required infrastructure on the Site.

7.2.8 A series of condition discharge applications associated with both the outline and subsequent reserved matters applications have been submitted and approved. A number of submissions are presently undetermined. This is discussed further in the Planning Statement submitted with this ES.

Guidance and Technical Standards

7.2.9 The socio-economic assessment presented in this Chapter has adopted a methodology consistent with HM Treasury’s Green Book appraisal guidance. The latest iteration of the Green Book⁴ (HM Treasury, 2022) has been taken account of in the assessment of Labour Market effects.

² SGC, 2014, CPNN Development Framework SPD, page 54

³ SGC, 2013, South Gloucestershire Local Plan Core Strategy 2006 – 2027, page 120.

⁴ HM Treasury, 2022, The Green Book.

7.3 Consultation

7.3.1 A Scoping Report (**Appendix A.10**) was submitted to SGC on 7 December 2021. It outlined the proposed topics for the ES, including the proposed scope of socio-economic assessment. The Scoping Opinion from SGC was issued to the Applicant on 3 February 2022 (**Appendix A.11**).

7.3.2 Responses referencing the proposed socio-economic assessment were received from the following consultees:

- SGC Community Infrastructure;
- SGC Affordable Housing;
- SGC ExtraCare Housing; and,
- SGC Self-Build Housing.

7.3.3 These responses have been considered, but no changes are required to the scope of this assessment as a result.

7.3.4 Since the Scoping Opinion was received, further discussions have been held with several bodies to inform the assessment. These include:

- **SGC Economic Development:** A meeting with SGC Economic Development was held on 14 February 2022. The discussion focused on the assessment methodology, the Labour Market Study Area boundary and scope, employment land and uses within the Proposed Development, the Site's planning history, and on the ELSNA, LHNA and the ELR as sources of information for the assessment;
 - **SGC Community Infrastructure; SGC Principal Planning (Strategic Sites):** A meeting with SGC Community Infrastructure and SGC Principal Planning (Strategic Sites) Officer was held on 15 February 2022. The discussion focused on the assessment methodology, the Healthcare Study Area boundary and scope, the Recreation and Public Access Study Area boundary and scope, community infrastructure within the Proposed Development, and on relevant SGC plans, policies and standards; and
 - **BCC Local Plan:** A meeting with BCC Local Plan Officer was held on 24 February 2022. The discussion focused on the assessment methodology including the assessment of potential cumulative effects, a summary of the Proposed Development and the CPNN, and the relationship between the Site and the surrounding area particularly relating to transportation and the Bristol neighbourhoods just south of the Site.
- No changes were required of the scope of this assessment as a result of the aforementioned consultations however information gathered has been used to inform **Section 7.5 – Baseline Conditions** and **Appendix B.3 – Detailed Baseline Conditions** as appropriate.
- 7.3.5 Consultation requests were made to officers in NSC Regeneration and SGC Education, but no substantive response was received. A brief, informal conversation was held with a WECA officer specifically about WECA documents of relevance to the Site.

7.4 Methodology

7.4.1 The socio-economic assessment has been undertaken in accordance with the EIA framework detailed within **Chapter 5 – Assessment Methods**.

Assessment Scope

7.4.2 The principal aspects considered within this assessment include:

- Direct, indirect and induced employment / labour market effects during the construction and operational phases of the Proposed Development;
- Direct effects on housing delivery and the housing market during the operational phase of the Proposed Development resulting from the provision of up to 3,675 residential dwellings (2036 Assessment) and 6,500 dwellings (2048 Assessment);
- Indirect and induced retail expenditure effects resulting from additional spending power of new residents within the Proposed Development during the operational phase;
- Direct and indirect effects resulting from housing delivery on recreation, public access, and access to open space during the construction and operational phases of the Proposed Development. It is to be noted that public access and accessibility has been assessed in **Chapter 8 – Transport and Access** with findings relevant to socio-economics presented within this Chapter;
- Indirect effects resulting from housing delivery during the operational phase of the Proposed Development on: healthcare (GP and dental surgeries); and education (nursery, primary, secondary and higher education).

Study Areas

7.4.3 The following Study Areas have been adopted within this assessment:

Housing Market Study Area

7.4.4 The Housing Market Study Area boundary is defined by the SGC administrative boundary. The Housing Market Study Area is presented in **Appendix B.1, Figure 7.1**.

7.4.5 The assessment takes cognisance of the Wider Bristol Housing Market Area (HMA) as identified within Appendix B of the LHNA⁵ (ORS, 2021). The Wider Bristol HMA comprises the local authority boundaries of SGC, BCC and NSC.

Labour Market Study Area

7.4.6 The Labour Market Study Area comprises the local authority boundaries of SGC, BCC and NSC. The Labour Market Study Area is presented in **Appendix B.1, Figure 7.2**.

7.4.7 This area has been chosen as it takes into account the interaction of the Site with Bristol and the M4/M5 corridors, the Wider Bristol HMA, and the commercial property market to best represent the mobility of labour across administrative boundaries. This approach enables a consistent Study Area in relation to the assessment of housing market effects and linked labour market effects.

Education Study Area

7.4.8 The Education Study Area is defined as nurseries and primary schools within 3.2km (2 miles) and secondary schools and further education within 4.8km (3 miles) of the Site. The Education Study Area is presented in **Appendix B.1, Figures 7.3, 7.4 & 7.5**.

7.4.1 The Study Area distances are consistent with the minimum statutory walking distance to school as set out in the New Home to School Travel and Transport Guidance⁶ (Department for

⁵ ORS, September 2021, West of England LHNA, para 47, page 198.

⁶ Department for Education, June 2014, Home to School Travel and Transport Guidance.

Education, 2014). Due regard will also be had to relevant expansion of schools contribution as defined within the IDP and schools included within the extant planning consent (for up to 2,675 dwellings on the Site).

Healthcare Study Area

- 7.4.2 The Healthcare Study Area is defined in line with the NHS Bristol, North Somerset and South Gloucestershire Clinical Commissioning Group (CCG) area. The Healthcare Study Area is presented in **Appendix B.1, Figure 7.6**.
- 7.4.3 The CCG area is comprised of the local authority boundaries of SGC, BCC and NSC⁷. There are five Lower Layer Super Output Areas (LSOA) and the four local ward areas within and directly adjacent to the Site.

Recreation and Public Access Study Area

- 7.4.4 The Recreation and Public Access Study Area incorporates the Site, and the surrounding area within 1km (0.62 miles) of the Site boundary. It is noted that public access has been assessed in **Chapter 8 – Transport and Access** with findings relevant to socio-economics presented within this Chapter. The Recreation and Public Access Market Study Area is presented in **Appendices B.1, Figure 7.7 and Figure 7.8**.
- 7.4.5 The Recreation and Public Access Study Area identifies the following:
- public access to the Site;
 - the metrobus network;
 - other existing bus routes;
 - designated active travel routes (ATRs);
 - public rights of way (PROWs);
 - strategic cycle network;
 - long distance paths (LDPs);
 - recreation and public open spaces falling within the following SGC defined open space categories⁸ (SGC, 2013):
 - informal recreational open spaces (includes parks, public gardens, amenity green space and green corridors);
 - natural and semi-natural green space (areas of green space where the primary purpose is of wildlife and biodiversity conservation and value);
 - outdoor sports facilities (includes playing pitches and golf courses);
 - provision for children and young people (all equipped children's play areas, LEAPs, NEAPs, and MUGAs as well as provision for young people like skate parks, BMX tracks);

⁷ NHS Bristol, North Somerset and South Gloucestershire Clinical Commissioning Group, February 2021, NHS Bristol, North Somerset and South Gloucestershire Clinical Commissioning Group Constitution, paragraph 2.1.1, page 11.

⁸ SGC, 2013, South Gloucestershire Local Plan Core Strategy 2006 – 2027, Appendix 5, page 192.

- allotments; and,
- outdoor tourism destinations.

Baseline Data Collection

- 7.4.6 To inform the assessment a desk-based review of publicly available data was undertaken to establish relevant baseline socio-economic conditions at the Site and the identified Study Areas. The following socio-economic indicators were considered:
- Current demographic characteristics, including population size and age structure;
 - Future population projections;
 - Current labour market characteristics, including working age population profile (level of economic activity, occupation and skills profiles) as well as the workplace economy profile (employment by industry and earnings);
 - Current housing market characteristics for SGC including affordable housing targets and overall housing capacity, as informed through relevant planning policy documentation;
 - Current education provision and capacity for all nurseries, primary schools and secondary schools;
 - Qualitative consideration of higher education facilities in proximity to the Site;
 - Current primary healthcare facilities, specifically the capacities of GP and dental surgeries informed by publicly available information of registered patient rolls, number of GPs, and existing capacity or demand pressure;
 - Current public access infrastructure and routes including: the existing bus network, designated ATRs, PROWs, LDPs and the strategic cycle network; and
 - Current recreation and public open spaces falling within the following SGC defined open space categories, as well as current outdoor tourism destinations.
- 7.4.7 The baseline conditions presented within this Chapter and **Appendix B.3 – Detailed Baseline Conditions** provides an evidence base of the ‘**Current State of the Environment**’, in which the effect of the COVID-19 pandemic has been given due consideration.
- 7.4.8 A list of baseline data sources is presented in **Appendix B.3 – Detailed Baseline Conditions**.

Modelling

- 7.4.9 Relevant quantitative data was analysed to predict socio-economic effects including the following from the construction and operation of the Proposed Development., including capital expenditure; gross and net construction employment; gross and net operational employment applying HCA guidance; retail expenditure; housing market effects; population yield and pupil yield. This model applied economic multipliers and additionality assumptions as detailed below in **Section 7.7 – Assessment of Likely Effects to calculated net employment (construction and operation)**.

Assessment

Consideration of Relevant Receptors

- 7.4.10 The information sources outlined above have been used to characterise the current baseline conditions of the Site and surrounding area. This allows the identification of relevant sensitive receptors.

Labour Market Sensitivity

- 7.4.11 For employment effects, the availability of labour and skills is critical in accommodating the demands, needs and requirements of the Proposed Development. The sensitivity of the labour market has been defined in relation to:
- The availability of skilled labour in the Labour Market Study Area, relative to regional and national averages;
 - The proportion of employment in relevant sectors (e.g. construction, manufacturing, wholesale and retail trade) within the Labour Market Study Area;
 - The availability of labour (including the unemployed) within the Labour Market Study Area; and;
 - Relevant education and training provision provided by institutions serving the Labour Market Study Area.
- 7.4.12 Plentiful labour and / or skills capacity results in a low sensitivity, whilst limited labour and / or skills capacity results in a high sensitivity. Sensitivity criteria relating to employment are shown in **Table 7.1** below.

Table 7.1: Labour Market Sensitivity

Sensitivity	Criteria
High	There is a shortfall of appropriate labour and skills. The Proposed Development would therefore lead to labour market pressure and distortions (i.e. skills and capacity shortages, import of labour, wage inflation).
Medium	There is a low or limited supply of appropriate labour and skills. The Proposed Development may therefore lead to labour market pressure or distortions.
Low	There is a readily available supply of appropriate labour and skills. The Proposed Development is therefore unlikely to lead to labour market pressure or distortions.

Source: Stantec (2022)

Sensitivity of other Receptors

- 7.4.13 For wider socio-economic effects including changes on expenditure, the housing market, education provision, healthcare provision, and recreation and public access provision, receptor sensitivity was determined with reference to the importance of the receptors likely to be affected and the extent to which any population change upon these could affect their economic performance or livelihood. The sensitivity of relevant receptors was therefore defined on a case by case basis, as detailed in **Table 7.7**.

Impact Assessment Methodology

Temporal Scope of Impact Assessment

7.4.14 This impact assessment has been taken across a two stage process:

2036 Baseline

7.4.15 The 2036 Baseline considers the baseline conditions anticipated to continue in absence of the Proposed Development being delivered. This includes delivery of the extant planning consent.

7.4.16 The 2036 Baseline comprises of:

- The extant planning consent;
- The additional works as consented through the 2021 S73 consent, which are measures required to be in place on the Site prior to the opening of the YTL Arena; and
- Cumulative Developments as discussed in the 'Approach to Cumulative Impact Assessment' subheading of **Section 7.4 – Methodology**, including that of YTL Arena (Cumulative Development 19/05500/P).

7.4.17 For clarity, it is assumed that in absence of the Proposed Development being approved, that the extant planning consent will be built out by the Applicant as there is clear market demand for the development that has been approved.

2036 Assessment

7.4.18 The 2036 Assessment considers the construction and operational effects of the proportion of the Proposed Development that is expected to be completed up to 2036. This corresponds to the completion of Transport Phase 1. The assessment presented considers the effects of delivering the proposed development (ie the net uplift) against the extant planning consent.

7.4.19 The Proposed Developments quantum of development for the 2036 Assessment is presented in **Table 7.9**. The 2036 Assessment comprises of:

- The Proposed Development up to 2036;
- The additional works as consented through the 2021 S73 consent, which are measures required to be in place on the Site prior to the opening of the YTL Arena; and
- Cumulative Developments as discussed in the 'Approach to Cumulative Impact Assessment' subheading of **Section 7.4 – Methodology**, including that of YTL Arena (Cumulative Development 19/05500/P).

7.4.20 For clarity, this assessment is inherently cumulative, meaning that the assessment within the 2036 Baseline also takes account for the cumulative development as discussed further in the '**Approach to Cumulative Development**' subheading of **Section 7.4 - Methodology**.

2048 Assessment Year

7.4.21 It is understood that construction of the Proposed Development will take 25-35 years with an estimated completion 2045-2055. For the purpose of this assessment however, 2048 has been selected as it is assumed that key infrastructure associated with the Proposed Development will be delivered by this date.

The 2048 assessment considers the effects of the Proposed Development due for completion by 2048, therefore assuming a 24-year construction programme. This corresponds to Transport Phases 2, 3 and 4.

The Proposed Developments quantum of development for the 2048 Assessment is presented in **Table 7.21**.

Magnitude of Change

- 7.4.22 The magnitude of change from the construction and operation of the Proposed Development on identified socio-economic receptors is determined using the criteria set out in **Table 7.2** below. The assessment of predicted Magnitude of Change from the Proposed Development has been informed by all publicly available information sources at the time of this assessment

Table 7.2: Magnitude of Change Criteria

Magnitude of Change	Type of Change	Criteria
High	Adverse	Employment changes: the number of jobs lost in the Study Area would be 250 or greater (based upon the EU definition of small and medium enterprises (European Commission, 2003)). Other socio-economic changes: adverse changes to identified receptors would be observed on an international, national or regional scale. Changes are likely to be experienced over the long term (i.e. 5+ years).
	Beneficial	Employment changes: the number of jobs created in the Study Area would be 250 or greater. Other socio-economic changes: beneficial changes to identified receptors would be observed on an international, national or regional scale. Changes are likely to be experienced over the long term (i.e. 5+ years).
Medium	Adverse	Employment changes: the number of jobs lost in the Study Area would be 50 or greater, but fewer than 250. Other socio-economic changes: Noticeable adverse changes, judged to be important at a local scale, to identified receptors. Changes are likely to be experienced over the medium term (i.e. 3-5 years).
	Beneficial	Employment changes: the number of jobs created in the Study Area would be 50 or greater, but fewer than 250. Other socio-economic changes: Noticeable beneficial changes, judged to be important at a local scale, to identified receptors. Changes are likely to be experienced over the medium term (i.e. 3-5 years).
Low	Adverse	Employment changes: the number of jobs lost in the Study Area would be greater than 10, but fewer than 50. Other socio-economic changes: Small scale adverse changes to identified receptors at the local level only. Changes are likely to be experienced over the short term (i.e. 1-2 years).
	Beneficial	Employment changes: the number of jobs created in the Study Area would be greater than 10, but fewer than 50. Other socio-economic changes: Small scale beneficial changes

Magnitude of Change	Type of Change	Criteria
		to identified receptors at the local level only. Changes are likely to be experienced over the short term (i.e. 1-2 years).
Negligible	Adverse	Employment changes: the number of jobs lost in the Study Area would be less than 10. Other socio-economic changes: very small-scale adverse changes to identified receptors at the local level only. Changes are likely to be experienced over the short term (i.e. less than 6 months).
	Beneficial	Employment changes: the number of jobs gained in the Study Area would be less than 10. Other socio-economic changes: very small-scale beneficial changes to identified receptors at the local level only. Changes are likely to be experienced over the short term (i.e. less than 6 months).
No Change		No change would be perceptible, either beneficial or adverse.

Source: Stantec (2022)

Significance Matrix of Socio-economic Effects

- 7.4.23 In line with standard EIA practice, a matrix-based approach was adopted to consider the sensitivity of identified receptors in tandem with the likely magnitude of change from the Proposed Development. This method allowed the level and significance in EIA terms of all predicted socio-economic effects to be determined. The EIA significance matrix adopted in this assessment is detailed in **Table 7.3** below.

Table 7.3: Significance Matrix of Socio-economic Effects

Sensitivity	Magnitude of change			
	High	Medium	Low	Negligible
High	Substantial	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Minor/Negligible	Negligible

Source: Stantec (2022)

- 7.4.24 In line with the methodology outlined in **Chapter 5 – Assessment Method**, moderate, major, or substantial likely effects are considered significant within the context of EIA Regulations.

Approach to Cumulative Impact Assessment

- 7.4.25 As set out in **Chapter 5** of the ES, the 2036 Baseline is inherently cumulative, considering developments likely to have been approved and implemented by 2036.
- 7.4.26 For the purpose of this Chapter, the cumulative impact assessment is also integrated into the 2036 Assessment presented in **Section 7.7 – Assessment of Likely Effects**

- 7.4.27 The assessment of likely socio-economic effects takes account of the influence of the cumulative developments which are likely to generate socio-economic effects which may interact with the Proposed Development. This includes assessing the contribution to housing delivery, meeting housing targets, employment generation, education, healthcare, and recreation and public access.
- 7.4.28 The Cribbs/Patchway New Neighbourhood Allocation seeks to deliver approximately 5,700 new homes in total and around 50ha of employment land, together with a range of community services and facilities. The allocation comprises of the extant consented level of 2,675 homes at Brabazon (P21/02390/RVC), and the developments at Fishpool Hill for 1,100 homes (PT12/1930/O), Haw Wood for 1,000 homes (PT14/0565/O) and 1,000 homes coming from Patchway Trading Estate (PTE). The Cribbs/Patchway New Neighbourhood Allocation (Adopted 2014) for the purpose of this assessment comprises of Fishpool Hill (PT12/1930/O) and Haw Wood (PT14/0565/O) as the Proposed Development accounts for the extant consented level (2,675 homes) and the homes previously allocated for delivery on the PTE (1,000 homes).
- 7.4.29 **Table 7.4** below identifies the cumulative developments as presented in Table 5.3 of the ES. Drawing upon evidence presented in **Appendix A.13, Table 7.4** below identifies the Study Area's applicable to the cumulative developments.

Table 7.4: Cumulative Development Sites – Socio-economics

Application Number	Description of Development	Applicable Study Areas
PT14/0565/O	Haw Wood - Mixed use development of 44 hectares of land comprising: up to 1,000 new dwellings (Use Class C3); an 86-bed Extra Care Home (Use Class C2); a mixed use local centre including a food store up to 1,422sqm net internal sales area (Use Classes A1, A2, A3, A4, A5, B1, D1, D2); a 2-form entry primary school; community facilities including a satellite GP surgery, dentist and community centre; associated public open space and sporting facilities; green infrastructure integrated with foot and cycle paths; together with supporting infrastructure and facilities including three new vehicular accesses. Outline application including access, with all other matters reserved	- Labour Market - Housing - Education - Healthcare - Recreation and Public Access
PT12/1930/O	Fishpool Hill - Mixed use development across 53.80 hectares of land comprising up to 1,100 new dwellings (Use Class C3) a local centre (Use Classes A1,A2,A3,A4, A5,B1,D1,D2) a primary school together with supporting infrastructure and facilities including: new vehicular access with Wyck Beck Road, public open space and landscaping. Outline application including access with all other matters reserved.	- Labour Market - Housing - Education - Recreation and Public Access
PT15/4165/F	Proposed Development of 80 dwellings (use class C3 including affordable homes), open space (including children's play space and improvements to Charlton Common), sustainable urban drainage, vehicular access, pedestrian and cycle accesses, pumping station and related infrastructure and engineering works.	- Labour Market - Housing - Recreation and Public Access - Education

Application Number	Description of Development	Applicable Study Areas
PT14/2646/O	Mixed use development on 3.15ha of land comprising offices (Use Class B2) Storage (Use Class B8) car showrooms (sui generis) and all associated ancillary facilities. Outline application including access with all other matters reserved.	Labour Market
PT14/1886/O	Demolition of nos 5 and 6 Catbrain Hill and development of 2.56 hectares of land comprising up to 110 new dwellings (Use Class C3) open space and associated works, including creation of new vehicular access from Catbrain Hill. Outline application including access, all other matters reserved.	- Labour Market - Housing - Recreation and Public Access - Education
PT15/4386/O	Alterations and reconfiguration of the Site with access to be determined (Outline) all other matters reserved including the erection of up to 14,674sqm of new buildings for uses within Use Classes A1 (shops) up to 12,723sqm, A3 (restaurants and cafes) up to 1,665sqm, A4 (drinking establishments) up to 930sqm, A5 (hot food take-away) up to 116sqm and D2 (assembly and leisure) up to 1,951sqm. Alterations to the front elevation of the Asda store (including removal and replacement of existing entrance structures), altered circulation, servicing and car parking layout (including alterations to lighting and landscaping), relocation and re-provision of bus stops and bus turning facility. Demolition of existing filling station and car wash and erection of new filling station. Provision of new public realm, including public space and landscaped areas.	Labour Market
PT15/5319/O	Hybrid planning application for 13,834 sqm new floorspace seeking full permission for an indoor ice rink, indoor ski venue, indoor skydiving venue, coffee drive thru, associated access, infrastructure, car parking and landscaping. Outline planning permission sought for a retail store, hotel, restaurant and car showroom with all matters reserved with the exception of access.	Labour Market
PT18/4908/F	Development of 10,872sqm of research and development facility (B1b) including ancillary offices, external compound and associated parking, landscaping, highways and drainage infrastructure.	Labour Market

Application Number	Description of Development	Applicable Study Areas
19/05500/P – The YTL Arena	Hybrid planning application comprising: the demolition of existing ancillary buildings and structures; full details associated with the change of use of, and associated external alterations to, the Brabazon Hangar buildings from Class B8 use to a mixture of Class D1, D2, A1, A3, A4 and B1a uses, along with outline details associated with infrastructure works including: revised vehicular access arrangements; redevelopment and reorganisation of the former aircraft apron to provide parking, servicing and associated infrastructure provision; plus associated landscaping, service infrastructure and other associated works and improvements.	- Labour Market - Recreation and Public Access
P19/16740/F	Amendments to the existing highway and highway junction at Charlton Road and West Way.	Labour Market
P19/16741/F	Formation of a temporary car park for up to 2,000 vehicles and bus, taxi, park and ride, pick up and drop off areas on the eastern end of the former Filton Airfield.	Labour Market
P19/16742/F	Construction of a new pedestrian bridge linking the former Filton Airfield and the Brabazon Hangar site over the Henbury Loop railway line, including associated demolition, earthworks and landscaping.	- Labour Market - Recreation and Public Access
PT14/5028/O	Mixed use development on 6.24 hectares of land comprising up to 120 new dwellings (Use Class C3) up to 8000 sq m of office development (Use Class B1) and up to 400sqm of ancillary retail use (Use Classes A1, A2, A3, A4 and A5) together with supporting infrastructure and facilities, including new vehicular access, landscaping and services. Outline application including access with all other matters reserved.	- Labour Market - Recreation and Public Access - Housing - Education
PT15/1634/RVC	Redevelopment of site for mixed use development comprising Use Classes: B1(a) Offices, B1(c) Light Industry, B2 General Industry, B8 Storage and Distribution, C1 Hotel including ancillary leisure and food and drink, sui generis trade units and car dealerships, with associated infrastructure, access, parking (Outline) with access to be considered with all other matters to be reserved.	- Labour Market - Recreation and Public Access
PT06/1001/O	Residential development on 39.57 hectares of land (Outline) with infrastructure, public open space and ancillary facilities. Means of access to be determined, all other matters reserved.	- Labour Market - Housing - Education

Application Number	Description of Development	Applicable Study Areas
PT16/4782/O	Outline planning permission for mixed use development comprising up to 1,290 dwellings including an extra care facility (Use Class C2/C3); community facilities (comprising use classes D1 and D2); provision of a mixed use local centre (Use Classes A1, A2, A3 and D1) together with the supporting infrastructure and facilities including: new vehicular and pedestrian accesses, public open space and landscaping with access to be determined and all other matters reserved.	- Labour Market - Housing
P21/05318/RM	Construction of primary access infrastructure (Brabazon Eastern Framework) that facilitates road links and associated pedestrian and cycle paths through the Brabazon Eastern Framework.	- Labour Market - Recreation and Public Access
P21/08021/RM	Laying out of public open space to include provision of two Local Equipped Areas of Play (LEAP), a Neighbourhood Equipped Area of Play (NEAP), area for Youth Play and a Sports Zone, informal open space, landscaping, water feature/sustainable drainage system (SuD) and all associated works.	- Labour Market - Recreation and Public Access
P21/06296/F	Erection of railway station with 1 no. footbridge, temporary car park, access.	- Labour Market - Recreation and Public Access
P20/24199/F	Application for the temporary change of use for a period of 3 years to mixed use retail (Class E), pop-up food and drink space (Classes A4, A5) and temporary events (sui generis) with associated car parking.	Labour Market
PT16/4928/O	Hybrid planning application for the demolition of farmhouse and agricultural buildings and erection of 327 dwellings with a primary school and nursery; along with site access/spine road, car parking, public open space, landscaping, drainage infrastructure and associated infrastructure; of which full permission is sought (with no matters reserved) for a site wide earthworks strategy and drainage infrastructure together with 150 no. dwellings (of the 327 total) and associated landscaping, layout, infrastructure and access; and outline permission is sought for the erection of 177 dwellings, primary school and nursery (Use Class D1) with access to be determined and all other matters reserved.	- Labour Market - Housing - Education
Full element of PT16/4928/O superseded by P20/03681/F	Erection of 150 no. dwellings.	- Labour Market - Housing - Education
PT17/5873/O	Erection of up to 158no dwellings	Labour Market

Application Number	Description of Development	Applicable Study Areas
		Housing
PT17/5387/F	Erection of Lidl foodstore (Class A1) with access, servicing, parking and associated works.	Labour Market
PT18/6360/F	– Land at Norton Farm - Demolition of existing buildings and erection of 30no dwellings.	- Labour Market - Recreation and Public Access - Housing
P20/05916/F	Erection of mixed-use development comprising of Hotel and Restaurant, Supermarket, Coffee Shop with Drive Thru Facility and multi-use building (comprising flexible combinations of Use (Class A1) shops, (Class A2) financial and professional, (Class A3) food and drink, (Class A5) hot food takeaways, (Class B1) business, (Class D1) non-residential institutions, and (Class D2) Assembly and Leisure).	Labour Market

Limitations and Assumptions

7.4.30 The following assumptions have been adopted in this assessment:

Extant Planning Consent

7.4.31 It is assumed that if approved, the Proposed Development will be built out by the Applicant. In absence of the Proposed Development being approved, it is assumed that the extant planning consent will be built out by the Applicant as there is clear market demand for the development that has been approved.

COVID-19

7.4.32 This assessment utilises data which was collected prior to the global disruption caused by the ongoing 2019-20 coronavirus pandemic. At the time of writing, COVID-19 has resulted in changes to socio-economic conditions, but there is no evidence to indicate the long-term implications of these changes. Currently available baseline data remains representative and appropriate to inform a robust and proportionate assessment of the Proposed Development.

Capital Expenditure

7.4.33 The Applicant has confirmed that the construction costs for delivering the Proposed Development 2048 Assessment total) will total to £2.1 billion at 2019 prices. This figure is based upon the Applicant's current understanding of the construction costs. It is acknowledged that the capital expenditure associated with the Proposed Development may be subject to change through design evolution, further planning, procurement, and development.

7.4.34 For the purpose of this assessment, this figure was uprated to 2022 prices by applying the UK Government's GDP Deflator⁹. This has resulted in a construction cost of £2.26 billion.

7.4.35 The construction costs for the Proposed Development (up to 2036) was calculated by pro-rating the delivery of the Proposed Development against the 12-year construction programme

⁹ GDP Deflator 2019 to 2022 prices of: 1.07853696826903

for the Proposed Development (2036 Assessment). This has resulted in a construction cost of £1.13 billion (2022 prices).

Key Business Sectors

- 7.4.36 As stated in the Scoping Report, the operational effects on manufacturing as a key business sector within SGC have been identified as being insignificant in EIA terms. As such it has not been included within the scope of this assessment.

Net Employment

- 7.4.37 To assess the scale of net additional jobs likely to be generated or supported by the development under the two assessment scenarios, additionality factors based on the characteristics of the Labour Market Study Area, were applied to predicted gross employment. Appropriate economic appraisal guidance and professional judgment based on similar economic impact assessments have been used to estimate values for:

- **Deadweight:** what would happen in the absence of the Proposed Development;
- **Leakage:** the proportion of employment opportunities accessed by people living outside the Study Area;
- **Displacement:** the proportion of Proposed Development benefit accounted for by a reduction in benefit elsewhere;
- **Substitution:** when a firm substitutes one activity for another to take advantage of public sector assistances; and
- **Multipliers:** to estimate further economic activity associated with additional income and supplier purchases.

- 7.4.38 The additionality factors adopted in this assessment are detailed in **Section 7.7 – Assessment of Likely Effects - 2036 Assessment and 2048 Assessment**.

Population Yield

- 7.4.39 The assessment of likely socio-economic effects was underpinned by population yield calculations which utilised the average persons per dwelling figures provided by the Applicant in agreement with SGC. These are as presented in **Table 7.5** below:

Table 7.5: Population Yield

Housing Mix	Average Persons Per Dwelling
House	2.4
1 bed house	1.5
2 bed flat / apartment	1.5
1 bed flat / apartment	1.5
Retirement Home 1 bed	1.0
Retirement Home 2 bed	1.5
Student Accommodation	Average Persons Per Unit
Student Accommodation	1

- 7.4.40 Detailed accommodation schedules for the cumulative development sites are not available and so a proxy of 2.4 persons per dwelling has been used. This is based on ONS statistics for the average household size in the UK. It is however acknowledged that a population yield assessment will be conducted for each cumulative development site within their standalone planning applications.

Pupil Yield

- 7.4.41 The SGC IDP (2014) notes that detailed calculations on pupil yield will be reliant on information on the mix of dwellings within new development. Where a mix of dwellings is not available, the SGC IDP 2014 proposes the following simplified ratio for calculating pupil yield:
- 36 primary school pupils per 100 residential units
 - 18 secondary school pupils per 100 residential units
- 7.4.42 This ratio had been applied to the cumulative development sites Fishpool Hill (PT12/1930/O) and Haw Wood (PT14/0565/O) which fall within the wider Cribbs/Patchway New Neighbourhood Allocation (Adopted 2014), applicable to the Site. As these are lower density schemes, it is considered appropriate to apply the SGC IDP (2014) ratio.
- 7.4.43 It is however acknowledged that the SGC IDP (2014) does not apply a ratio of nursery provision. The SGC IDP (2014) states that the number of under-5 year-olds generated is calculated on a pro-rata basis, using the expected number of primary pupils. This pro-rata basis is to be determined at reserved matters through discussions with the Council.
- 7.4.44 This approach has also been applied to the extant planning consent for comparative purposes.
- 7.4.45 As set out in the Planning Statement, the SGC IDP (2014) ratio is geared towards lower density housing led-schemes and would likely result in a significant overestimation of pupil yield for higher density, flat-led developments such as the Proposed Development. Given this, the Applicant has agreed with SGC the use of the Pupil Product Ratios noted in **Table 7.6 below**.

Table 7.6: Pupil Product Ratio

Pupil Product Ratio Table from SGC								
Pupils per 100 dwellings	Number of bedrooms							
	Flats			Houses				
	1	2	3	1	2	3	4	5
Nursery	12	12	18	0	24	36	39	32
Primary	3	3	30	3	9	30	46	65
Secondary	1	1	14	1	3	14	27	46

- 7.4.46 An indicative housing mix has been provided by the Applicant up to 2036, as presented in **Table 7.14**.

Education and Healthcare

- 7.4.47 The baseline conditions presentation for education (nursery, primary, secondary and further education) and healthcare (GP's and Density) is based on publicly available information at the time of writing.

Cumulative Developments

Assessment of the cumulative developments is based on publicly available information at the time of writing.

7.5 Baseline Conditions: Current State of the Environment

- 7.5.1 This section provides a summary of the socio-economic baseline conditions of relevance to this assessment, with **Appendix B.3** presenting the **Detailed Baseline Conditions**. This section provides an evidence base for the ‘**Current State of the Environment**’, in which the effect of the COVID-19 pandemic has been given due consideration.
- 7.5.2 The ‘Current State of the Environment’ comprises of the Site as it presently is, including Brabazon Phase 1. Brabazon Phase 1 is currently under construction and will be completed by Q1 2024. It is considered sufficiently complete at this stage to enable it to form part of the environmental baseline.
- 7.5.3 The sensitivity of receptors to potential socio-economic effects is identified in **Table 7.1 above** and has been used to inform the impact assessment presented in **Section 7.7 – Assessment of Likely Effects**.

The Site

- 7.5.4 The Site is the former Filton Airfield, a predominantly vacant and brownfield area extending to 141.94 ha. A Site Location Plan is provided in **Appendix A.1** and a Site Context Plan is provided in **Appendix A.5**.
- 7.5.5 It comprises associated former airfield buildings, hangars and runway as well as surrounding blue-green infrastructure.
- 7.5.6 Redevelopment works are currently underway on the Site. The runway is being demolished and removed to facilitate development of the extant planning consent and in line with the 2021S73 consent (PT14/3867/O). Brabazon Phase 1 is being constructed in the northeast of the Site, accessed of the Blenheim Roundabout.
- 7.5.7 The Applicant has confirmed that the western half of the runway is subject to a temporary planning consent (ref. PT18/2355/F) for a period of 10 years (up to 2028) for a mix of uses including general storage, temporary events and cabin / depot uses. There are multiple tenants operating onsite principally for general storage uses. The Site has an Estates Management team, including security personnel, based at the Site Operations Centre. The team has 3 Full-Time Equivalent (FTE) roles. These are the only FTE jobs on the Site.
- 7.5.8 Comprehensive descriptions of the Site and the Surrounding Area are provided in **Chapter 2 – Site and Surrounding Area**.

The Surrounding Area

- 7.5.9 The Site is within the North Fringe of Bristol and is surrounded by the residential communities of Filton, Patchway, Charlton Hayes, Bradley Stoke, Stoke Gifford, Harry Stoke and Frenchay in SGC and Henbury, Brentry and Southmead in BCC.
- 7.5.10 Other key uses and employers in proximity include:
- the Royal Mail sorting office to the east of the Site;
 - the high-tech industry and aerospace / defense cluster businesses such as Rolls Royce, GKN, Airbus, BAE Systems and MBDA to the south of the Site;
 - the Cribbs Causeway Regional Shopping Centre (the Mall) and neighbouring retail parks to the north of the site;

- offices; and
- significant transport links.

7.5.11 The Site is within the allocated CPNN. As summarised in **Section 7.2 - Policy Context, Legislation, Guidance, and Standards**, the CPNN is envisaged as a new community which will deliver 5,700 new homes, approximately 50 ha of employment land, and essential community infrastructure in the North Fringe of Bristol.

Labour Market

7.5.12 The Labour Market Study Area has an estimated population of 969,300, of which 623,700 people or 64.35% are working age (16 – 64 years)¹⁰. This is a higher proportion working age population than the South West region (59.98%) and England (62.31%). Between 2016/20, the population in the Study Area has grown by 24,900 people, which has occurred across all age ranges including the working age population cohorts.

7.5.13 Economic activity rates are higher in the Study Area (83.80%) than the South West (81.28%) and England (79.41%); and, within the Study Area is higher than the comparator averages in SGC area (84.65%), NSC (85.37%) and BCC (81.38%). This indicates that, in comparison to regional and national averages, a higher proportion of the Labour Market Study Area's working age population are economically active and in employment.

7.5.14 There are an estimated total 23,100 people who are unemployed but actively seeking work in the Labour Market Study Area, corresponding to a 4.29% unemployment rate. The majority (58.44%) of unemployed residents live in BCC. SGC has a lower unemployment rate than the Labour Market Study Area average at 3.17%, whereas BCC (5.12%) and NSC (4.59%) have higher unemployment rates. The South West region has a slightly lower unemployment rate (4.00%) while the England national average has a slightly higher unemployment rate (4.85%).

7.5.1 The Labour Market Study Area has a high proportion of the workforce employed in: professional occupations (24.01%); associated professional and technical occupations (16.73%); and administrative and secretarial occupations (11.88%)¹¹. The percentage of the workforce in these occupations is higher in the Labour Market Study Area than in the South West region and in England¹².

7.5.1 There are 537,000 workforce jobs across the Labour Market Study Area. The industrial profile suggests that there is more of a focus on skill-based employment in than Labour Market Study Area than in the South West region and England. Within the Labour Market Study Area, SGC has a high proportion of businesses in the manufacturing sector (10.06%) and BCC has a high proportion of business in the professional, scientific and technical services sector (13.19%). These trends are reflected in the ELSNA's conclusion that the West of England sub-region is a diverse and thriving economy with a range of business sectors and several specialisms¹³ (Atkins, 2021).

7.5.2 The resident labour force is weighted towards higher skilled employment in professional, technical, and administrative occupations. Residents obtained further education qualifications at a higher rate than the regional and national average. This is reflected in the mean gross average earnings for the Labour Market Study Area, which is £36,175. Residents in the Labour Market Study Area make more on average than residents in the region, but less than residents nationally.

7.5.3 The comparison of pre-pandemic (2019 and prior) to the latest available (2020 and 2021) statistical information shows that whilst the Labour Market Study Area has been affected by

¹⁰ ONS, 2020, Population Estimates – Local Authority based by Five Year Age Band

¹¹ ONS, 2020, Annual Population Survey

¹² ONS, 2020, Annual Population Survey

¹³ Atkins, June 2021, West of England ELSNA.

the COVID-19 pandemic, there remains comparatively high rates of economic activity and employment, high jobs density, low levels of unemployment, and opportunities for skilled work for residents within the Study Area.

Key Business Sectors

Construction Sector

- 7.5.4 The construction sector may experience socio-economic effects from the Proposed Development, during the construction phase only. The majority of additional turnover generated during the construction phase is expected to go to this sector due to the focus on construction firms, construction labour and construction materials. The additionality calculations have made an allowance for leakage of employment out of the Study Area as jobs are taken by in-bound commuters.
- 7.5.5 There are 26,500 (5.25%) construction sector jobs in the Labour Market Study Area¹⁴. Both BCC and SGC have 11,000 construction jobs (41.51% each), and NSC has 4,500 construction jobs (16.98%).
- 7.5.6 The sector had a total output of £2.175 billion gross added value (GVA) in 2018¹⁵. The GVA uprated to 2022 prices is £2.393 billion¹⁶.

Wholesale and Retail Trade Sector

- 7.5.7 The wholesale and retail sector may experience socio-economic effects from the Proposed Development during the operational phase.
- 7.5.8 The Site is in proximity to The Mall at Cribbs Causeway, a large regional shopping centre, and the surrounding retail, motor trade and complementary uses within Centaurus Retail Park and Cribbs Causeway Retail Park and along Merlin Road and Lysander Road. New retail and supermarket floorspace is part of the Proposed Development (see **ES Chapter 3 – Proposed Development**).
- 7.5.9 Wholesale and retail trade is the largest business sector within the Labour Market Study Area totalling 68,000 jobs (13.15%)¹⁷. BCC has 34,000 jobs (50%), SGC has 21,000 jobs (30.88%) and NSC has 13,000 jobs (19.12%).
- 7.5.10 The sector had a total output of £3.082 billion gross added value (GVA) in 2018¹⁸. The GVA uprated to 2022 prices is £3.391 billion¹⁹.

Housing Market

- 7.5.11 The Housing Market Study Area is defined by the SGC administrative boundary. The Local Housing Needs Assessment (LHNA) finds that *“104%... of the household growth [in SGC] is for households aged over 65, and couples with children aged 35-54”* and that *“[t]his suggests homes meeting older persons requirements along with family housing should be priorities”*¹

¹⁴ ONS, 2020, Business Register and Employment Survey.

¹⁵ ONS, 2019, Regional Gross Value Added (Balanced) by Industry: Local Authorities by NUTS1 Region: UKK South West.

¹⁶ HM Treasury, 2022, GDP Deflators at Market Prices, and Money GDP
(<https://www.gov.uk/government/collections/gdp-deflators-at-market-prices-and-money-gdp>)

¹⁷ ONS, 2020, Business Register and Employment Survey.

¹⁸ ONS, 2019, Regional Gross Value Added (Balanced) by Industry: Local Authorities by NUTS1 Region: UKK South West.

¹⁹ HM Treasury, 2022, GDP Deflators at Market Prices, and Money GDP
(<https://www.gov.uk/government/collections/gdp-deflators-at-market-prices-and-money-gdp>)

(ORS, 2021). The LHN target for SGC is 1,412 dwellings per year totalling 28,240 dwellings up to 2040¹ (ORS, 2021).

- 7.5.12 It concludes that 13.7% of overall need is for flats, 16.8% is for 1-2 bedroom houses, 49.9% is for 3 bedroom houses, 15.4% is for 4 bedroom houses, 2.1% is for 5 bedroom houses, and 2.1% is for “*institutional populations*” i.e. people living in managed residential accommodation such as nursing homes and student halls¹ (ORS, 2021). Figure 152 of the LHNA shows that the overall need for older person housing in SGC is projected to total 7,256 dwellings comprising 5,096 sheltered dwellings and 2,160 extra care dwellings¹ (ORS, 2021).
- 7.5.13 The Site forms part of SGC’s housing land supply due to its allocation in CPNN. As stated in the Policy CS15, Policy CS26 and the CPNN Development Framework SPD, the CPNN allocation is for up to 5,700 dwellings and the adopted housing land supply is 22,545 new homes up to 2027. The CPNN therefore comprises 25.28% of that housing land supply. The extant planning consent has permission for up to 2,675 dwellings, and therefore makes up 46.93% of the CPNN allocation and 11.87% of the housing land supply.

Education

- 7.5.14 In the Education Study Area there are 52 nurseries, 38 primary schools, 16 publicly-funded secondary schools (an additional 4 Special Secondary Schools) and 7 further education campuses. The following analysis is however based only on nurseries and schools for which enrolment data was available and includes 39 nurseries, 35 primary schools and 11 secondary schools as discussed below.
- 7.5.15 These education facilities present a broad range of accessibility and choice for the community, including: special schools, specialist schools, independent schools, technical schools, private and public schools, as well as further education campuses with courses in the arts, business, information technology, health and sports, medical sciences, caring and teaching, construction and engineering.
- 7.5.16 The surplus / deficit capacity analysis for nurseries, primaries and secondaries concludes the following:
- Nurseries are undersupplied with a deficit of 679 places (126.50%) across the Education Study Area. While this is not unexpected due to the part-time attendance of many children in nursery settings resulting in more pupils on the roll than likely attending each day, the level of deficit indicates that some families may find it challenging to access nursery places;
 - There is a surplus of 947 places in the 31, baseline primary schools for which data was available. The baseline primaries are operating at 91% of their capacity. 20 are in SGC, and 11 are in BCC. 4 of the primaries (14.29%) currently have more pupils than their stated maximum capacity. They are: Callicroft Primary Academy; Henbury Court Primary Academy; Little Mead Primary Academy; and, St Michael’s Church of England Primary School, Stoke Gifford; and
 - Secondary schools are running at 84.76% of their capacity with a total surplus of 1,796 places in the 11 baseline secondary schools for which data was available. 3 (21.43%) of the secondary schools have more pupils than their stated maximum capacity. They are: Bristol Free School; Bristol Metropolitan Academy; and, St Bede’s Catholic College.
- 7.5.17 There are 3 further educational institutions with 7 campuses located within the Education Study Area. As above, they provide a broad range of courses for students with many programmes tailored to young students (16 – 19 years) and to upskilling adult students through vocational and accredited courses. There is a particular focus on engineering, manufacturing, construction and mechanical courses through the SGS Filton Campus and the City of Bristol’s Advanced Engineering Centre and Motor Vehicle Technology Centre campuses.

Healthcare

- 7.5.18 There are 1,006,909 total patients and 869 total GPs across the 105 GP surgeries in the Study Area though some surgeries did not have data available. Based on the data available, there is an average GP to patient ratio of 1:1,159. This is within the SGC IDP (2014) minimum requirement of 1 GP per 1,700 population.
- 7.5.19 As patient roll information is not publicly available for dental surgeries it is not possible to calculate the dentist to patient ratio. However, of the 122 dentist surgeries where it is known if they are accepting new NHS patients or not, 45% (55 surgeries) are accepting new patients at this time.
- 7.5.20 Patient roll information is not publicly available for 9 GP surgeries. For 10 GP surgeries, patient roll information is publicly available but is incomplete. For 5 dentist surgeries, there was not publicly available information to determine if they are accepting new NHS patients.
- 7.5.21 The Site is within or directly adjacent to 5 Lower Layer Super Output Areas (LSOA), each facing varying degrees and factors of deprivation but concluding that similar domains of deprivation need to be addressed. The majority of the Site is within South Gloucestershire 005A LSOA.
- 7.5.22 The South Gloucestershire Joint Health and Wellbeing Strategy 2017-2021 finds that SGC benefits from “*low levels of deprivation*,” but that health inequalities and unmet health needs persist in some parts of the community²⁰. It identifies the most deprived areas as “*clustered*” within some of its urban neighbourhoods, including Patchway near the Site.
- 7.5.23 The CCG’s IMD rank is 118, where 1 is the most deprived and 191 is the least deprived CCG area²¹. This indicates that the CCG is in the 40% least deprived CCG areas in England.

Recreation and Public Access

- 7.5.24 The existing Filton Airfield Site has one access provided via the Combination Junction, which links the Site to the A38 Gloucester Road. Access to Brabazon Phase 1, which is currently under construction, is off Blenheim Roundabout on Hayes Way to the north of the Site.
- 7.5.25 The existing Site does not have an internal highway network and through-movement across the Site is prohibited to the public. The Site is bounded by Hayes Way and Merlin Road to the north, A38 Gloucester Road to the east, a railway line to the south and the A4018 to the west.
- 7.5.26 The Site is served by 12 bus services within 1km of the Site boundary. These services are accessible to the Site using pedestrian footways along Hayes Way and the A38. These services link directly to key public transport interchanges in the West of England, including Bristol Temple Meads train station, Bristol City Centre and Bath City Centre, as well as local and regional destinations such as Southmead Hospital and UWE Frenchay Campus. Further information on bus services and the frequency of these services is available in **Chapter 8 - Transport and Access**.
- 7.5.27 There are no long distance paths (LDPs) within the Site. There are two LDPs that pass through the Recreation and Public Access Study Area - The Community Forest Path LDP and the Bristol to Brecon Walk LDP²².

²⁰ SGC, 2017, South Gloucestershire Joint Health and Wellbeing Strategy 2017-2021, page 10

²¹ MHC&LG, 2019, File 13 Clinical Commissioning Group (CCG) Summaries (<https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019>).

²² It is when both LDPs cross through Crow Lane Open Space that they are within the Recreation and Public Access Study Area.

- 7.5.28 There are Public Rights of Way (PROWs) within the northern part of the Site, as shown on **Figure 7.7** in **Appendix B.1**. Footpath OAY/84 runs in an east west direction, with connections north to OAY/83, OAY/85 and OAY/86.
- 7.5.29 There are 23 PROW within the surrounding area as shown in **Appendix B.1 (Figure 7.7)**.
- 7.5.30 There are no strategic cycle networks within the Site however there are a number within the surrounding area as shown in **Appendix B.1 (Figure 7.7)**.
- 7.5.31 As detailed in **Chapter 11 – Landscape, Townscape and Visual**, there are no areas of recreation or public open space within the Site. The desk-based assessment has however identified 79 existing recreational, public open space and outdoor tourism destination assets within the Recreation and Public Access Study Area, as shown in **Table B.3.8** of **Appendix B.3 – Detailed Baseline Conditions** and in **Appendix B.1 (Figure 7.8)**.

2036 Baseline

- 7.5.32 This section utilises the baseline conditions discussed above in the ‘**Current State of the Environment**’ to predict the likely baseline conditions in 2036 where possible.
- 7.5.33 By 2036, the Study Area is anticipated to have a resident population of about 1,090,944 people; an increase of 32,671 (9.13%) on 2022 levels. Proportionally, the increased population between 2022/36 is spread across the following age cohorts: 0-14 years (3,271, 4.98%), 15-64 years (17,371, 7.11%), 65+ years (12,030, 17.50%).
- 7.5.34 Between 2020 and 2040 the LHNA estimates a total of 138,800 projected households in SGC, and the change by household type and age of representative to total 20,300²³ (ORS, 2021). The largest household growth by age is for older people aged 65+ with a 12,500 (61.58%) of increase, followed by households aged 25 to 54 with a 6,800 (33.5%) increase. The largest household growth by type is for families with children with a 9,200 (45.32%) increase and single person households with a 6,500 (32.02%) increase.
- 7.5.35 Within this assessment it is assumed that employment levels, sector splits, qualification attainment and economic activity rate will be broadly similar to their current levels, adjusted proportionally to reflect the increase in population and the ageing profile of the Labour Market Study Area.
- 7.5.36 It is assumed that the cumulative development sites identified within the ‘**Approach to Cumulative Impact Assessment**’ within **Section 7.4 – Methodology** will be delivered by 2036. This includes the Cribbs/Patchway New Neighbourhood (CPNN) Allocation (Adopted 2014) which will deliver approximately 5,700 new homes in total and around 50 ha of employment land, together with a range of community services and facilities. The CPNN allocation comprises of the extant consented level of 2,675 homes at Brabazon (P21/02390/RVC), and the developments at Fishpool Hill for 1,100 homes (PT12/1930/O), Haw Wood for 1,000 homes (PT14/0565/O) and 1,000 homes coming from Patchway Trading Estate (PTE). It is however understood that the 1,000 homes allocated for delivery on the PTE will need to be re-allocated to an alternative area of the New Neighbourhood Allocation as the PTE has not, and is not anticipated to come for housing delivery in the near future.
- 7.5.37 This also includes The YTL Arena ((Committed Development (19/05500/P)) which is due to be complete in 2024, prior to commencement of construction for the Proposed Development.
- 7.5.38 The assessment of the cumulative development sites based on publicly available information is presented in **Section 7.7 – Assessment of Likely Effects** below, to ensure clarity of the methodology applied. The 2036 Assessment and 2048 Assessment however report on the effects of delivering the Proposed Development against the extant planning consent (ie the net uplift).

²³ ORS, September 2021, West of England LHNA, page 176.

- 7.5.39 It is of note that 302 residential units from Brabazon Phase 1 of the extant planning consent is currently under development at the time of writing this assessment.

Summary of Receptor Sensitivity

- 7.5.40 Drawing on the baseline conditions information above, **Table 7.7** below identifies the receptors likely to experience effects from the Proposed Development and, which therefore require to be assessed. **Table 7.7** also determines the sensitivity of each identified receptor and the development phase(s) when it is likely to experience effects. **Appendix B.3 - Detailed Baseline Conditions** includes a detailed summary of Receptor Sensitivity in **Table B.3.9**.

Table 7.7: Identified Sensitivity of Relevant Receptors – Summary

Receptor	Sensitivity	Phase of Likely Effect(s)
Labour Market Study Area	Low	Construction and Operation
Key Business Sector: Construction	Low	Construction
Key Business Sector: Wholesale and Retail Trade Sector	Low	Operation
Housing Market Study Area	High	Operation
Education Study Area	High	Operation
Healthcare Study Area	Medium	Operation
Recreation and Public Access Study Area	Low	Construction and Operation

7.6 Embedded Mitigation

Construction

Environmental Management

- 7.6.1 A Construction Environmental Management Plan (CEMP) will be implemented for each phase to reduce the risk of any likely significant adverse effects on environmental receptors as a result of construction activities, and to minimise disturbance to local residents. Of relevance to this assessment, the CEMP will include measures and procedures to manage public access and amenity effects during construction, including to existing residential development and open and community space. A Framework CEMP is provided at **Appendix A.9** and will be secured by planning condition.

Operation

Education

- 7.6.2 The Proposed Development will provide two nurseries up to 72 spaces each, two Primary Schools (a 2FE and a 3FE) and One Secondary School (7FE), which contribute to the education needs identified across the CPNN and the wider community. The Primary and Secondary School will include dual use outdoor open space which will also be available for community use.

Healthcare

- 7.6.3 The Proposed Development up to 2036 includes provision of dental care and a GP Surgery however due to the outline nature of the application, a quantum of development is not provided. This is to be determined at the reserved matters stage.

Transport

- 7.6.4 As part of the Brabazon Masterplan Eastern framework proposals, a Design Code was submitted in 2021 which outlines the design framework for the Eastern Framework, including details for the internal highway network, access to the railway station, micro-mobility hub, strategy for cycle parking spaces and a high-level car parking strategy. These proposals have been secured as part of the extant planning consent and will be secured for the Proposed Development and are therefore considered as Embedded Mitigation.
- 7.6.5 As part of this submission, amendments were also made to reflect the revised Cribbs Patchway MetroBus Extension route through the Site, amending the access route from Combination Junction to the new Brabazon Masterplan entrance on the A38.
- 7.6.6 A package of sustainable transport measures will be implemented to encourage a modal shift including: a cycling and micro-mobility strategy; car parking measures; travel incentives; and a delivery, freight and logistics strategy.

Landscape

- 7.6.7 The Proposed Development includes a number of landscape associated embedded mitigation measures, including the following of relevance to this assessment:
- Retention of Filton Wood with open space buffer around southern edge;
 - Retention of a green corridor along Henbury Trym watercourse;
 - Creation of new green links, north to south across the site, to connect Filton Wood with Brabazon Park in front of the YTL Arena; Cribbs Causeway with Fishpool Hill and Charlton Common; and Charlton Hayes to Charlton Common and Brabazon Park;
 - Retention of the lagoon to the east of the A38;
 - Areas of existing woodland, hedgerows and trees to be retained;
 - The provision of informal open space, natural and semi-natural open spaces, outdoor sports provision, play area provision and allotments; and
 - Public space providing setting for listed hangar 16S.
- 7.6.8 .

7.7 Assessment of Likely Effects

2036 Assessment

Construction

Capital Expenditure

- 7.7.1 As discussed in **Section 7.4 – Methodology**, an estimated capital expenditure of £1.13 billion is required to deliver the Proposed Development to 2036.

Gross Construction Employment

- 7.7.2 Gross construction employment is estimated by dividing the capital expenditure figure above (£1.13 billion) by the average annual turnover required to support an employee in the construction sector across the South West.

- 7.7.3 Analysis of the Department for Business, Energy and Industrial Strategy (DBEIS) Business Population Estimates for The UK and Regions 2021²⁴ suggests a turnover of £123,448 is required on average to support a single employee. Applying the UK Government GDP Deflator to uprate this to 2022 prices²⁵, results in a figure of £125,643.
- 7.7.4 The construction of the Proposed Development up to 2036 is therefore estimated to support 9,013 gross temporary construction Person Years of Employment (PYE) over the 12-year construction programme. This would equate to 901 Full Time Equivalent (FTE) jobs²⁶.
- 7.7.5 The extant planning consent was estimated to support 6,790 gross temporary construction PYE equating to 679 FTE jobs²⁷. The Proposed Development is therefore delivering a net uplift of 222 FTE jobs above the extant planning consent.
- 7.7.6 Cumulative Development P20/05916/F²⁸ does however report a maximum of 80 gross FTE jobs over a 70-week construction period.
- 7.7.7 In combination, the 2036 assessment of gross temporary construction would result in 981 FTE jobs. It is however acknowledged that additional provision of temporary construction employment opportunities from Cumulative Developments across the 2036 Baseline parameters²⁹, could be available throughout the Labour Market Study Area.

Net Construction Employment

- 7.7.8 Only a proportion of total construction employment benefits would be taken by residents within the Labour Market Study Area due to mobility of labour and competition from external construction firms.
- 7.7.9 To take account of these factors, the additionality assumptions detailed in **Table 7.8** below have been used to convert the estimated gross construction employment into overall net construction employment. The gross to net calculation has used information from the Homes & Communities Agency's Additionality Guide³⁰ and has adopted a cautious approach to avoid over estimation.

Table 7.8: Construction Employment Additionality Assumptions

Factor	Value	Rationale
Deadweight	20%	In the absence of the Proposed Development occurring there would be continued development interest in the Site from the current owner (the Applicant) through delivery of the extant permission.
Leakage	25%	Given the scale of the Proposed Development a medium level of leakage is allowed for recognising that 25% of the employment opportunities will be taken by residents from outside the Study Area.
Displacement	50%	A medium level of displacement is also anticipated in recognition that the scale of construction activity and timeframe for the Proposed Development may displace construction firms and workers from other sites to this site.

²⁴ Department for Business, Energy and Industrial Strategy (DBEIS) (2021) Business Population Estimates for The UK and Regions 2021, Table 19 – South West

²⁵ GDP Deflator figure applied: 1.01778434384693 (uprate 2021 prices to 2022 prices)

²⁶ 10 person years of employment to each full-time equivalent (FTE)

²⁷ As reported on Page 16 of Chapter 7 – Community, Economic and Social of the extant Filton Airfield planning consent (March 2018) by BAE Systems

²⁸ Land Off Fox Den Road, Stoke, Gifford, South Gloucestershire

²⁹ The cumulative assessment is based on publicly available information at the time of writing

³⁰ Homes & Communities Agency, Additionality Guide, Fourth Edition 2014

Factor	Value	Rationale
Substitution	0%	We have not made any allowance for substitution as we do not consider it relevant for this type of employment activity.
Multiplier	2.17	This multiplier value is taken from the 2015 Input-Output Analytical Tables and applied to the net construction jobs position to reflect jobs supported in the construction supply chain through indirect supply chain effects.

- 7.7.10 Based on these additionality assumptions, the 9,013 gross construction PYE created by the Proposed Development for the 2036 Assessment is expected to support approximately 5,879 net temporary construction PYE jobs across the 12-year construction programme within the Labour Market Study Area. This is the equivalent to 588 net FTE jobs.
- 7.7.11 Applying the additionality assumptions presented in **Table 7.8** above to the extant planning consent results in approximately 4,429 net temporary construction PYE jobs, equivalent to 443 FTE jobs. The Proposed Development is providing a net uplift of 145 FTE from the extant planning consent.
- 7.7.12 Applying the additionality assumptions to the Cumulative Development P20/05916/F³¹ results in approximately 52 net temporary construction PYE jobs, equivalent to 5 FTE jobs.
- 7.7.13 It is however acknowledged that additional provision of temporary construction employment opportunities from Cumulative Developments across the 2036 Baseline parameters³², could be available throughout the Labour Market Study Area.
- 7.7.14 In accordance with the methodology detailed in **Section 7.4**, the net construction employment associated with the Proposed Development against the extant planning consent would represent a High magnitude of change on the Labour Market receptor (a Low sensitivity receptor) across the Study Area resulting in a **Long Term Moderate Beneficial** cumulative effect.

Key Business Sector

Construction

- 7.7.15 The construction of the Proposed Development is expected to result in some temporary construction displacement within the Labour Market Study Area.
- 7.7.16 There are 26,500 (5.25%) construction sector jobs in the Labour Market Study Area³³. Both BCC and SGC have 11,000 construction jobs (41.51% each), and NSC has 4,500 construction jobs (16.98%). The construction of the proposed development to 2036 is anticipated to support 5,879 net temporary construction PYE jobs which represents a 22.18% of the current employment positions in the construction sector across the Labour Market Study Area.
- 7.7.17 The construction sector in the South West had a total output of £2.17 billion Gross Value added value (GVA) in 2018³⁴. Up-rated to 2022 prices this is £2.39 billion³⁵.

³¹ Land Off Fox Den Road, Stoke, Gifford, South Gloucestershire

³² The cumulative assessment is based on publicly available information at the time of writing

³³ ONS, 2020, Business Register and Employment Survey.

³⁴ ONS, 2019, Regional Gross Value Added (Balanced) by Industry: Local Authorities by NUTS1 Region: UKK South West.

³⁵ HM Treasury, 2022, GDP Deflators at Market Prices, and Money GDP
(<https://www.gov.uk/government/collections/gdp-deflators-at-market-prices-and-money-gdp>)

- 7.7.18 The creation of 5,879 net temporary construction PYE is anticipated to generate some £279.70 million in net GVA pa over the 12-year construction period to 2036. This would represent an uplift of 11.70% against current estimated output.
- 7.7.19 The extant planning consent results in £210.70 million net GVA. The Proposed Development results in a net uplift of £69.0 million in the period to 2036.
- 7.7.20 The Cumulative Development P20/05916/F³⁶ results in £248,256 net GVA.
- 7.7.21 It is acknowledged that any additional provision of temporary construction employment opportunities from Cumulative Developments across the 2036 Baseline parameters³⁷, will further stimulate GVA throughout the Labour Market Study Area.
- 7.7.22 In accordance with the methodology detailed in **Section 7.4**, the net construction employment associated with the Proposed Development against the extant planning consent would represent a High magnitude of change on the Labour Market receptor (a Low sensitivity receptor) across the Study Area resulting in a **Long Term Moderate Beneficial** cumulative effect.

Recreation and Public Access Study Area

- 7.7.23 There are a number of PRoW located within the northern part of the Site, as shown on **Figure 7.7** in **Appendix B.3**.
- 7.7.24 As detailed in **Section 7.6 - Embedded Mitigation**, a CEMP will be implemented for each phase to reduce the risk of any likely significant adverse effects on environmental receptors as a result of construction activities, and to minimise disturbance to local residents. Of relevance to this assessment, the CEMP will include measures and procedures to manage public access (including that of the PRoW) and amenity effects during construction, including to existing residential development and open and community space. A Framework CEMP is provided at **Appendix A.9** and will be secured by planning condition.
- 7.7.25 It is assumed that the identified Cumulative Developments are likely to require an individual CEMP (or similar) as a condition of development.
- 7.7.26 The change in access to recreation and public access provisions associated with construction of the Proposed Development and 2036 Baseline parameters would result in a Low magnitude of change on the recreation and public access receptor (a Low sensitivity receptor as per **Table 7.7**), resulting in a **Long Term Minor/Negligible Beneficial** cumulative effect.

³⁶ Land Off Fox Den Road, Stoke, Gifford, South Gloucestershire

³⁷ The cumulative assessment is based on publicly available information at the time of writing

Operation

7.7.27 The Proposed Development up to 2036 is assumed to deliver the quantum of development as presented in **Table 7.9** below.

Table 7.9: 2036 Quantum of Proposed Development

Element	Quantum of Development
Houses (number)	880
Apartments (number)	2,795
Office (NIA sqm) (<i>aka Business Offices and R&D - B1a</i>)	77,589
Industrial (NIA sqm) (<i>aka General Industrial - B1b/c and B2</i>)	26,019
Extra Care (number)	300 units
Student Accommodation (NIA sqm)	26,334
University (NIA sqm)	11,025
Retail (m2) (<i>aka Town Centre Uses</i>)	15,000
Hotel (1 hotel 2036, 3 hotels 2048)	220 beds
Education Provision	• 0.4ha of land for 1 x Nursery (East) for up to 72 places • 0.4ha of land for 1 x Nursery (West) for up to 72 places • 2.0ha of land for 1 x Primary School (East) 2FE • 3.0ha of land for 1 x Primary School (West) 3FE • 8.31ha of land for 1 x Secondary School (South) 7FE
Health provision	• 1 medical practice (10 GPs assumed) • 1 dental practice
Community Provision	• Community hall inclusive of library, indoor sports and youth provision

Gross and Net Operational Employment

7.7.28 The provision of each of these elements will have associated employment opportunities. As shown in **Table 7.11** below, employment density assumptions³⁸ have been applied to the proposed floorspace quantum to calculate likely gross employment arising from each employment generating use within the Proposed Development up to 2036. This is expressed in terms of gross number of FTE workers likely to be directly employed in support of each operational use.

³⁸ Employment Density Guide 3rd edition

7.7.29 As with the construction jobs, additionality assumptions detailed in **Table 7.10** below have been used to convert the estimated gross operational employment into overall net operational employment. The gross to net calculation has used information from the Homes & Communities Agency's Additionality Guide³⁹ and has adopted a cautious approach to avoid over estimation.

Table 7.10: Operation Employment Additionality Assumptions

Factor	Value	Rationale
Deadweight	20%	In the absence of the Proposed Development occurring there would be continued development interest in the Site from the current owner (the Applicant) through delivery of the extant permission. Some of the employment from occupiers of the space have been reduced from the gross figure to account for this.
Leakage	25%	Given the scale of the Proposed Development a medium level of leakage is allowed for recognising that 25% of the employment opportunities will be taken by residents from outside the Study Area.
Displacement	50%	A medium level of displacement is also anticipated in recognition that the scale of the new, modern employment space which may influence businesses locational decision making and may displace firms and workers from other sites to this site.
Substitution	0%	We have not made any allowance for substitution as we do not consider it relevant for this type of employment activity.
Multiplier	1.62	The multiplier recognises the supply chain effects of the direct employment and business operations. This value is an average for the multipliers across the different sectors that will be located at the Site.

7.7.30 **Table 7.11** below applies the employment density assumptions⁴⁰ to the Proposed Development floorspace quantum to calculate gross FTE Jobs. Additionality assumptions from **Table 7.10** have then been applied to calculate net FTE jobs.

Table 7.11: Predicated Employment per Operational Use – Proposed Development 2036

Land Use	Gross Floorspace (NIA)	Job Density (sqm per job)*	Gross Jobs (FTE)**	Net Jobs (FTE)
Office (m2) (aka Business Offices and R&D - B1a)	65,951	10	6,595	3,205
Industrial (m2) (aka General Industrial - B1b/c and B2)	22,116	45	491	239
Extra Care (number)	300 units	-	171	83
Retail (m2) (aka Town Centre Uses)***	12,750	17	750	365
Hotel (1 hotel 2036)	220 beds	1 job per 3 rooms	107	52
Education Provision: ■ 0.4ha of land for 1 x Nursery	-	-	240	117

³⁹ Homes & Communities Agency, Additionality Guide, Fourth Edition 2014

⁴⁰ Employment Density Guide 3rd edition

Land Use	Gross Floorspace (NIA)	Job Density (sqm per job)*	Gross Jobs (FTE)**	Net Jobs (FTE)
<i>(East) for up to 72 places</i> 0.4ha of land for 1 x Nursery (West) for up to 72 places 2.0ha of land for 1 x Primary School (East) 2FE 3.0ha of land for 1 x Primary School (West) 3FE 8.31ha of land for 1 x Secondary School (South) 7FE				
Total			8,354	4,060

*applied to NIA – using a net to gross ratio of 0.85

**figure presented assume 100% occupancy in line with the HCA guidance

*** retail NIA calculated at a ratio of 0.65

7.7.31 As presented in **Table 7.11** above, the Proposed Development to 2036 is estimated to support 8,354 gross FTE jobs and 4,060 net FTE jobs. It is of note that whilst 26,334 sqm (NIA) of Student Accommodation and 11,025 sqm (NIA) of University floorspace will be provided by 2036, there will likely be only a small amount of additional employment associated with these uses and this is unknown at this point so has been set to zero for this analysis.

7.7.32 The Proposed Development up to 2036 includes provision of a GP surgery and dental care however due to the outline nature of the application, a quantum of development is not provided. This is to be determined at the reserved matters stage.

7.7.33 The extant planning consent also applied employment density assumptions as presented in **Table 7.12** below. Additionality assumptions from **Table 7.10** have been applied to calculated net FTE jobs.

Table 7.12: Predicated Employment per Operational Use – Extant Planning Consent

Land Use	Gross Floorspace	Job Density (sqm per job)*	Gross Jobs (FTE)**	Net Jobs (FTE)
Offices (B1) – HQ	78,030 sqm (GFA)	10	6,632	3,223
B1 (b/c), B2, B8	32,130sqm (GFA)	47	580	282
Retail/café in employment hub	-	-	25	12
120 bedroom hotel	-	1 job per 3 rooms	40	19
Food store	2,787sqm (GEA)	17	140	68

Land Use	Gross Floorspace	Job Density (sqm per job)*	Gross Jobs (FTE)**	Net Jobs (FTE)
Pub and other community uses including the library	-	-	90	44
Nursery x 2 (60 places), primary schools x 2 (3FE and 2FE), secondary school (7FE)	-	-	240	117
70 extra care units	-	-	40	19
Total			7,787	3,784

*applied to NIA – using a net to gross ratio of 0.85

**figure presented assume 100% occupancy in line with the HCA guidance

- 7.7.34 The extant planning consent reported 7,787 gross FTE jobs in total across the varying employment land uses as reported in **Table 7.12** above. Applying the additionality assumptions presented in **Table 7.10**, this would result in 3,784 net FTE jobs.
- 7.7.35 The Proposed Development is delivering a net uplift of 567 gross FTE jobs and 276 net FTE jobs in the period to 2036.
- 7.7.36 Whilst the exact operational employment associated with the Cumulative Developments will be determined through each separate planning application, **Table 7.13** below indicates a potential total of 2,676 gross FTE jobs would be generated ⁴¹, including that for The YTL Arena ((Cumulative Development (19/05500/P)). Additionality assumptions from **Table 7.10** have been applied to calculate net FTE jobs, which results in 1,297 net FTE jobs.

Table 7.13: Predicated Employment per Operational Use – Cumulative Developments

Cumulative Development (Planning Ref)	Land Use****	Gross Floorspace (NIA)	Job Density (sqm per job)*	Gross Jobs (FTE)**	Net Jobs (FTE)
PT14/0565/O – Haw Wood	A1, A2, A3, A4, A5, B1, D1, D2	1,422	31	46	22
PT12/1930/O – Fishpool Hill	A1	520	18	30	14
	A2	640	16	40	19
	A3	640	18	37	18
	D1	1,600	65	25	12
	D2	1,600	65	25	12
	B1	1,600	50	32	16
PT15/4386/O	A1	12,723	18	727	353
	A3	1,665	18	95	46
	A4	930	18	53	26
	A5	116	18	7	3
	D2	1,951	65	30	15

⁴¹ This assessment is based on publicly available information at the time of writing.

Cumulative Development (Planning Ref)	Land Use****	Gross Floorspace (NIA)	Job Density (sqm per job)*	Gross Jobs (FTE)**	Net Jobs (FTE)
PT15/5319/O	Visitor Attraction	13,834	165	84	41
PT18/4908/F	R&D facility	5,306	50	106	52
	B1 office	749	11	68	33
	Atrium showroom	185	13	14	7
	Public sector services	69	12	6	3
19/05500/P – The YTL Arena	-	-	-	518***	252
PT16/4782/O	A1, A2	999	15	518	252
P20/24199/F	-	-	-	40***	19
P20/05916/F	-	-	-	170***	83
Total				2,676	1,297

*applied to NIA – using a net to gross ratio of 0.85

**figure presented assume 100% occupancy in line with the HCA guidance

*** figure provided in publicly available information with the planning application

****retail NIA calculated at a ratio of 0.65

7.7.37 The additional provision of these potential employment opportunities across the 2036 Baseline parameters with further stimulate GVA throughout the Labour Market Study Area.

7.7.38 In accordance with the methodology detailed in **Section 7.4**, the gross operational employment associated with the Proposed Development against the extant planning consent would represent a High magnitude of change on the Labour Market receptor (a Low sensitivity receptor) across the Study Area resulting in a **Permanent Moderate Beneficial** effect.

Key Business Sectors

7.7.39 In 2036 Proposed Development will have the following effect on the identified key business sector The assessment takes account of the cumulative sites identified in **Section 7.4 – Methodology**.

Wholesale and Retail

7.7.40 The wholesale and retail trade is the largest business sector within the Labour Market Study Area totalling 68,000 jobs (13.15%)⁴² BCC has 34,000 jobs (50%), SGC has 21,000 jobs (30.88%) and NSC has 13,000 jobs (19.12%).

7.7.41 The sector had a total output of £3.082 billion GVA in 2018⁴³. The GVA uprated to 2022 prices is £3.391 billion⁴⁴.

⁴² ONS, 2020, Business Register and Employment Survey.

⁴³ ONS, 2019, Regional Gross Value Added (Balanced) by Industry: Local Authorities by NUTS1 Region: UKK South West.

⁴⁴ HM Treasury, 2022, GDP Deflators at Market Prices, and Money GDP (<https://www.gov.uk/government/collections/gdp-deflators-at-market-prices-and-money-gdp>)

- 7.7.42 Retail provisions within the Proposed Development include retail/café in an employment hub and a food store resulting in a total of 165 Gross FTE Jobs and 80 Net FTE Jobs as presented in **Table 7.12** above.
- 7.7.43 Based on an average GVA per head in 2022 prices of £39,847.45, the creation of 80 Net FTE Jobs is anticipated to generate some £3.19 million net GVA.
- 7.7.44 As shown in **Table 7.13**, a number of the cumulative development sites include retail provision which would result in additional GVA stimulus for the Labour Market Study Area. Based on publicly available information, it is anticipated the 367 Net FTE jobs from Cumulative Development sites (PT12/1930/O – Fishpool Hill; and PT15/4386/O) would result in £14.65 million net GVA.
- 7.7.45 It is of note, that a separate Retail Impact Assessment has been submitted alongside this ES. This should be read in conjunction with this Chapter to understand in more detail the potential retail and leisure capacity at the Site.
- 7.7.46 In accordance with the methodology detailed in **Section 7.4**, the gross operational employment associated with the Proposed Development against the extant planning consent would represent a High magnitude of change on the Labour Market receptor (a Low sensitivity receptor) across the Study Area resulting in a **Permanent Moderate Beneficial** cumulative effect.

Housing Market Effects

- 7.7.47 The Proposed Development will provide 3,675 units residential dwellings (houses and apartments) directly supporting SGC in meeting its housing delivery and housing land supply targets. The Proposed Development is providing 1,000 residential dwellings (houses and apartments) more than the anticipated delivery of 2,675 dwellings in the extant planning consent.
- 7.7.48 By 2036, the Proposed Development will deliver up to 5,012 dwellings in total, as detailed in **Table 7.14** below. The Proposed Development will provide 880 houses, 2,795 apartments, 600 extra care beds and 737 bed student accommodation.

Table 7.14: Units to be delivered by the Proposed Development up to 2036

Type of unit	Number of units
Houses	880
Apartments (2-bed)	2,795
Extra Care (1-bed)	600
Student Accommodation	737
Total	5,012

- 7.7.49 Following a detailed assessment of viability through the Cribbs Patchway New Neighbourhood (CPNN) Framework Agreement and subsequent Site-Specific Agreement (SSA) processes, the extant planning consent establishes an affordable housing provision of 17% (455 affordable dwellings). The percentage provision for the Proposed Development will be agreed through a viability appraisal.

Demographics

7.7.50 As presented in **Section 7.4 – Methodology**, population yield calculations are based upon the average person per dwelling figures provided by the Applicant in agreement with SGC.

7.7.51 Applying the average number of residents per dwelling as detailed in **Section 7.4 – Methodology**, it is estimated that the Proposed Development will yield a population of 7,642 residents by 2036 as presented below in **Table 7.15**.

Table 7.15: Population Yield – Proposed Development (2036)

Type of Unit	Average Person per Dwelling	New Units by 2036	New Residents by 2036
House	2.4	880	2,112
2 bed flat / apartment	1.5	2,795	4,193
1-bed retirement home	1.0	600	600
Student Accommodation	1	737	737
Total		5,012	7,642

7.7.52 The extant planning consent estimated an increase in population of 6,420 people, based on an average household size of 2.4 people. A detailed accommodation schedule is not available to apply the methodology presented in **Table 7.15**. The Proposed Development represent a new resident uplift of 1,222 residents.

7.7.53 As stated in the ‘**2036 Baseline**’ subheading of **Section 7.5 – Baseline Conditions** and within the ‘**Approach to Cumulative Impact Assessment**’ within **Section 7.4 – Methodology** it is assumed that by 2036 the Cribbs/Patchway New Neighbourhood Allocation (Adopted 2014) will deliver Fishpool Hill (1,100 homes) and Haw Wood (1,000 homes).

7.7.54 Based on publicly available information of the relevant cumulative developments and by applying a population yield proxy of 2.4 persons per dwelling (as discussed in **Section 7.4 – Methodology**), it is estimated that these cumulative developments will result in 5,560 residential units of which 1,473 will be affordable and 116 extra care units (see **Table 7.16** below).

Table 7.16: Population Yield – Cumulative Developments (2036)

Cumulative Development (Planning Ref)	Residential Dwellings	Affordable Provision	Extra Care
PT14/0565/O - Haw Wood	1,000	255	86
PT12/1930/O - Fishpool Hill	1,100	281	-
PT15/4165/F	80	28	-
PT14/1886/O	105	37	-
PT14/5028/O	120	43	-
PT06/1001/O	1,200	400	-
PT16/4782/O	1,290	292	30

Cumulative Development (Planning Ref)	Residential Dwellings	Affordable Provision	Extra Care
PT16/4928/O	327	40	-
Full element of PT16/4928/O superseded by P20/03681/F	150	34	-
PT17/5873/O	158	55	-
PT18/6360/F	30	8	-
Total	5,560	1,473	116

- 7.7.55 The Cribbs/Patchway New Neighbourhood Allocation, excluding the Proposed Development and extant planning consent and comprising of Haw Wood (PT14/0565/O) and Fishpool Hill (PT12/1930/O), will deliver 2,100 homes, or 37.8% of the total cumulative provision (5,560 homes).
- 7.7.56 In combination, the Proposed Development and the cumulative developments would deliver 9,235 residential dwellings, 716 extra care places and 737 student accommodation directly supporting SGC in meeting its housing delivery and housing land supply targets, including that for extra care.
- 7.7.57 In accordance with the methodology detailed in **Section 7.4**, the Proposed Development will provide 880 houses, 2,795 apartments, 600 extra care beds and 737 bed student accommodation. This represents a High magnitude of change on the housing market receptor (a High sensitivity receptor) across the Study Area resulting in a **Permanent Substantial Beneficial** cumulative effect.

Local Centres

- 7.7.58 The delivery of 3,675 homes and apartments, 600 extra care and 737 student accommodation from the Proposed Development will generate additional residential retail expenditure capacity within the assessed Labour Market Study Area. This will result in an expected uplift in actual local retail expenditure.
- 7.7.59 The average weekly household expenditure per person on goods and services in the South West (uprated to 2022 prices) was £276.80 as shown in **Table 7.17** below.

Table 7.17: Average weekly household expenditure per person – South West

Commodity or Service	Average weekly household expenditure (£)
Food & non-alcoholic drinks	66.70
Alcoholic drinks, tobacco & narcotics	12.80
Clothing & footwear	23.50
Housing(net)1, fuel & power	81.90
Household goods & services	40.80
Health	9.50
Transport	92.10
Communication	17.90

Recreation & culture	85.40
Education	7.90
Restaurants & hotels	53.30
Miscellaneous goods & services	46.00
Other expenditure items	92.60
Total expenditure	630.40
Average weekly expenditure per person (£)	276.80

Sources: ONS (2018) Household expenditure by countries and regions: Table A33

7.7.60 Using this as a basis, the estimated spending by residents per annum in total from the Proposed Development is £62.53 million, broken down as follows⁴⁵:

- £12.66 million from 880 homes;
- £40.23 million from 2,795 apartments;
- £4.32 million from 600 extra care units; and
- £5.30 million for 737 student accommodation.

7.7.61 The extant planning consent is for the delivery of 2,675 homes, which would result in an estimated spending by residents per annum in total of £38.50 million in household expenditure. The Proposed Development represents an uplift of £24.03 million.

7.7.62 The additional housing provision from the cumulative development sites will generate additional residential retail expenditure capacity within the Labour Market Study Area, contributing towards an uplift in actual local retail expenditure. It is anticipated that this uplift will be calculated with each planning application submitted with each standalone cumulative development site.

7.7.63 In accordance with the methodology detailed in **Section 7.4**, the retail expenditure associated with the Proposed Development against the extant planning consent would represent a High magnitude of change on the Wholesale and Retail Key Business Sector receptor (a Low sensitivity receptor) across the Study Area resulting in a **Permanent Moderate Beneficial** cumulative effect.

Education

7.7.64 It is important to have regard to the existing level of education provision in the extant Airfield planning consent, the detail of which is enshrined in the Framework Agreement (FA), SGC IDP (2014), and Site Specific S106 Agreement (SSA). At Brabazon, the consented level of provision is as follows:

- 2 x 72 place nurseries
- 2 form entry (FE) primary school (420 pupils);

⁴⁵ The retail expenditure for extra care units and student accommodation has been half compared to that for homes and apartments. This to account for their reduce income and associated retail expenditure.

- 3 FE primary school (630 pupils); and
- 7 FE secondary school (c1,500 pupils).

- 7.7.65 The Proposed Development will provide two nurseries up to 72 spaces each, two Primary Schools (a 2FE and a 3FE) and One Secondary School (7FE), which contribute to the education needs identified across the CPNN. The Primary and Secondary School will include dual use outdoor open space which will also be available for community use. The delivery of education provision will be agreed with SGC as the local education authority.
- 7.7.66 The adopted Cribbs Patchway New Neighbourhood Development Framework SPD (SGC, 2014) requires the delivery of the following across the CPNN:
- Primary school: 10 FE across five sites;
 - Secondary School: 1 x 7 FE; and
 - 5 x 72 place full-day nurseries across the CPNN.
- 7.7.67 As discussed in **Section 7.4 – Methodology**, an education assessment of the cumulative sites outwith the CPNN allocation has not been undertaken.
- 7.7.68 An indicative housing mix for the Proposed Development has been provided by the Applicant up to 2036 which reflects the intention to deliver a sustainable, high-density development. This has allowed the calculation of a pupil yield for the Proposed Development which is set out in **Table 7.18** below.

Table 7.18: Pupil Yield – 2036

Pupil Yield				
Housing Mix	New Units by 2036	Nursery Yield	Primary Yield	Secondary Yield
2 bed house	264	63	24	8
3 bed house	528	190	158	74
4 bed house	88	34	40	24
2 bed flat / apartment	1,398	168	42	14
1 bed flat / apartment	1,397	168	42	14
Total up to 2036		623	306	134

Nursery

- 7.7.69 As noted above, the extant planning consent makes provision for 2no. 72-place nurseries to sit alongside the two primary schools (discussed further below). This is a consistent level of provision across the CPNN where each school is allocated a 72-place nursery.
- 7.7.70 As set out in **Table 7.18**, the Proposed Development would result in a pre-school pupil yield of 623 nursery aged pupils by 2036. This is 332% above the capacity of the proposed nursery provision of 144 spaces within the Proposed Development. As noted in **Section 7.5** and **Appendix B.3**, nursery provision across the Education Study Area is also oversubscribed.
- 7.7.71 The capacity pressure associated with nursery provision is however within the context that many nursery pupils attend part time. Early years education is also provided in a variety of settings including commercial nurseries. The Planning Statement notes the potential for commercial nurseries to be provided within the scheme to meet demand. Elsewhere within

the CPNN allocation, nursery provision will be delivered at Fishpool Hill (PT12/1930/O) and Haw Wood (PT14/0565/O). As discussed in **Section 7.4** however, the SGC IDP (2014) does not provide a ratio of nursery provision and therefore an assessment of this has not been possible. It is however acknowledged that these sites will contribute towards further nursery provision demand within the Study Area. It is assumed an educational assessment will be undertaken for each site, suggesting mitigation as appropriate.

- 7.7.72 It is also not possible to calculate nursery demand for the extant planning consent due to the SGC IDP (2014), however it is noted that proposed nursery provision for the extant and Proposed Development are the same. Furthermore, as discussed below the Proposed Development to 2036 would also likely produce a smaller yield of secondary and nursery pupils than the extant consent.
- 7.7.73 Whilst the above assessment has indicated a shortfall in the nursery provision within the Proposed Development, it is acknowledged that there is potential commercial nursery (as set out in the Planning Statement) provision to meet some or all of demand from the Proposed Development however this is to be determined at reserved matters.
- 7.7.74 Therefore, in accordance with the methodology detailed in **Section 7.4**, the nursery demand from the Proposed Development against the extant planning consent would represent a Low magnitude of change on the Education receptor (a High sensitivity receptor) across the Study Area resulting in a **Permanent Moderate Adverse** cumulative effect.

Primary

- 7.7.75 As set out in **Table 7.18** above, the Proposed Development would result in a yield of 306 primary pupils by 2036. This compares to a primary yield of 949 pupils that was predicted for the extant planning consent up to 2036. The scale of difference is due to the change in anticipated housing mix towards a higher density development with a greater reliance on flats which have a much lower pupil yield.
- 7.7.76 The Proposed Development includes the delivery of a 2FE and a 3FE primary school with a total capacity of 1,050 spaces. This provision would substantially exceed the demand created by the Proposed Development alone, leaving a surplus capacity of 744 which could support education pressure within the surrounding area.
- 7.7.77 Considering the broader CPNN allocation against the SGC IDP (2014) methodology – refer to **Section 7.4** - Fishpool Hill (PT12/1930/O) would produce a primary yield of 360 pupils by 2036 and Haw Wood (PT14/0565/O) would produce a primary yield of 396 by 2036. It is understood that both developments will deliver 2 FE primary schools each. Applying the SGC IDP (2014) pupil yield ratio these would be sufficient to meet primary school educational demand arising from each site.
- 7.7.78 In accordance with the methodology detailed in **Section 7.4**, the primary school demand from the Proposed Development against the extant planning consent would represent a Medium magnitude of change on the Education receptor (a High sensitivity receptor) across the Study Area resulting in a **Permanent Major Beneficial** cumulative effect.

Secondary

- 7.7.79 As set out in **Table 7.18** above, the Proposed Development would result in a yield of 134 secondary school pupils up to 2036. The Proposed Development includes provision for a 7 FE secondary school with capacity for 1,500 pupils. The pupil yield from the Proposed Development would therefore account for less than 10% of the capacity (1,500 pupil places) of the proposed secondary school.
- 7.7.80 It is understood that the secondary school to be delivered through the Proposed Development has been sized to meet the needs of development across the CPNN and beyond, therefore addressing wider secondary school education pressures in the surrounding area.

- 7.7.81 In terms of comparison, the extant planning consent would produce 474 pupils by 2036 – an additional 340 pupils. This discrepancy is reflective of the fact the Proposed Development is a higher density development with a large proportion of flats which produce a much smaller secondary pupil yield.
- 7.7.82 The cumulative developments at Fishpool Hill (PT12/1930/O) and Haw Wood (PT14/0565/O) would produce a secondary school pupil yield of 180 and 198 pupils by 2036 respectively.
- 7.7.83 In combination, the pupil yields from the Proposed Development, Fishpool Hill (PT12/1930/O) and Haw Wood (PT14/0565/O) up to 2036 would only take up 34.13% (512 pupil places) of the 1,500 pupil capacity of the secondary school to be delivered through the Proposed Development.
- 7.7.84 In accordance with the methodology detailed in **Section 7.4**, the secondary school demand from the Proposed Development against the extant planning consent would represent a Medium magnitude of change on the Education receptor (a High sensitivity receptor) across the Study Area resulting in a **Permanent Major Beneficial** cumulative effect.

Further Education

- 7.7.85 The Proposed Development will deliver up to 11,025 sqm of further education buildings by 2036. As noted at **Section 7.5** and **Appendix B.3**, the resident labour force in the study area is already weighted towards higher skilled employment with residents having obtained further education qualifications at a higher rate than the regional and national average.
- 7.7.86 The delivery of further education through the Proposed Development will provide additional opportunities for local residents, and supplement the existing provision of the further education institutions within the Education Study Area.
- 7.7.87 In accordance with the methodology detailed in **Section 7.4**, the further education provision from the Proposed Development against the extant planning consent would represent a Medium magnitude of change on the Education receptor (a High sensitivity receptor) across the Study Area resulting in a **Permanent Major Beneficial** cumulative effect.

Healthcare

Dentists

- 7.7.88 As patient roll information is not publicly available for dentist surgeries it is not possible to calculate the dentist to patient ratio. It is also acknowledged that the SGC IDP (2014) sets out that Dental Services do not work to registered populations so there is no direct relationship between location of developments and dental practices.
- 7.7.89 As discussed in **Section 7.5** and **Appendix B.3**, of the 122 dentist surgeries where it is known if they are accepting new NHS patients or not, 45% (55 surgeries) are accepting new patients at this time.
- 7.7.90 By 2036 the population across the Study Area is expected to increase to 1,090,944 people; an increase of 32,671 (9.13%) on 2022 levels.
- 7.7.91 As set out in **Table 7.15**, the Proposed Development would result in 7,642 new residents by 2036 (taking account of housing, apartment, student accommodation and extra care units provision). This will result in increased pressure on existing dentist provision.
- 7.7.92 The Proposed Development up to 2036 includes provision of dental care however due to the outline nature of the application, a quantum of development is not provided. This is to be determined at the reserved matters stage. It is assumed that sufficient dental care provision will be provided to meet demand from the Proposed Development.

- 7.7.93 It is acknowledged that the extant planning consent also included dental care provision, however it also did not state a quantum of development.
- 7.7.94 The Cumulative Sites identified in Section 7.4 will further contribute towards pressures on dental practices in the Study Area.
- 7.7.95 In accordance with the methodology detailed in **Section 7.4**, the Proposed Development against the extant planning consent would represent a Negligible magnitude of change on the healthcare receptor (a Medium sensitivity receptor) across the Study Area, as it is assumed sufficient provision will be provided within the Proposed Development, resulting in a **Permanent Negligible Beneficial** cumulative effect.

GPs

- 7.7.96 As noted in **Section 7.5**, there are currently 1,006,909 total patients and 869 total GPs across 105 GP surgeries in the Healthcare Study Area. The average GP to patient ratio is 1:1,158, below the SGC IDP (2014) requirement of 1 GP per 1,700 population.
- 7.7.97 By 2036 the population across the Study Area is expected to increase to 1,090,944 people; an increase of 32,671 (9.13%) on 2022 levels. Assuming no change in GP provision across the Study Area, this would result in a GP to patient ratio of 1,255 in 2036. This is still below the SGC IDP (2014) requirement.
- 7.7.98 As set out in **Table 7.15**, the Proposed Development would result in 7,642 new residents by 2036 (taking account of housing, apartment, student accommodation and extra care units provision). This will result in increased pressure on existing GP provision.
- 7.7.99 The SGC IDP (2014) required an 8 GP surgery to be provided across the whole of the CNPP.
- 7.7.100 It is acknowledged the embedded mitigation associated with the extant planning consent included the delivery of a new 6 GP surgery. In comparison, the Proposed Development may deliver a larger surgery with an additional 4 GPs to address the additional population that would result from the Proposed Development. It has been assumed that this would be delivered by 2036.
- 7.7.101 In accordance with the methodology detailed in **Section 7.4**, the healthcare provision associated with the Proposed Development against the extant planning consent would represent a Low magnitude of change on the healthcare receptor (a Medium sensitivity receptor) across the Study Area resulting in a **Permanent Minor Beneficial** effect.

Recreation and Public Access

Public Access

- 7.7.102 As discussed in **Chapter 8 – Transport**, there are a number of PRoW located within the northern part of the Site, as shown on **Figure 7.7** in **Appendix B.3**. Access to these routes will be maintained during operation of the Proposed Development, with details of any revised routes as required to be agreed in consultation with SDC.
- 7.7.103 The Proposed Development seeks to create a 15-minute neighbourhood development, with dedicated foot and cycleways free from motorised forms of transport. To enable this, a 'transport phasing' approach has been adopted whereby future phases of development cannot proceed until modal shift has been established.
- 7.7.104 A modal shift beyond the provision of foot and cycleways will be delivered through a greater service from Metrobus, local buses, and rail services to the Site.
- 7.7.105 As detailed in **Section 7.6 – Embedded Mitigation**, a Design Code was submitted in 2021 as part of the Brabazon Masterplan Eastern Framework proposals. This includes details for an internal highway network, micro-mobility hub, strategy for cycle parking spaces and a high-

level car parking strategy. These proposals were secured as part of the extant planning consent and are therefore considered as part of Embedded Mitigation for the 2036 assessment.

7.7.106 To meet the Design Code's objective of encouraging people to walk, a contribution towards achievement of a 15-minute neighbourhood, two major pedestrian boulevards have been proposed. These boulevards will connect all the key areas within the masterplan and create a network of car-free routes. The Design Code also outlines the key design principles for the roads throughout the Masterplan area. This is discussed further in **Chapter 8 – Transport**.

7.7.107 It is of note that Cumulative Development proposal P21/05318/RM is for the construction of primary access infrastructure (Brabazon Eastern Framework) that facilitates road links and associated pedestrian and cycle paths through the Brabazon Eastern Framework.

7.7.108 The Proposed Development includes a package of sustainable transport measures as follows:

- **Cycling and Micro-mobility** - encouraging the use of cycling, e-bike and e-scooter travel is a core part of the strategy to discourage shorter car journeys. The measures set out include high-quality, segregated cycle infrastructure, enhanced public and private cycle parking, and shared mobility provision;
- **Car Parking Measures** - Suppression of car parking and measures to discourage car use will be central to achieving modal shift. The core strategies to be implemented include a reduction in car parking provision across the Transport Phases, parking pricing mechanisms, car clubs, and controlled parking zones;
- **Travel Incentives** - In order to encourage the use of sustainable transport options, incentives or subsidies will be offered to residents and staff based on Site; and
- **Delivery, Freight and Logistics** - as well as measures to discourage private car use, a number of strategies will be used to reduce the impact of traffic arising from deliveries to and within the site. These include a Delivery Consolidation Centre, Last Mile / Urban Logistics Strategies, common procurement, timed deliveries, and shared cargo bikes.

7.7.109 As part of the Design Code submission (2021), amendments were also made to reflect the revised Cribbs Patchway MetroBus Extension route through the Site, amending the access route from Combination Junction to the new Brabazon Masterplan entrance on the A38.

7.7.110 Transport Phase 1 has considered the provision of up to 3,675 homes and includes six Metrobus services per hour per direction on the Metrobus route that will pass through the Site. It also includes a new train station connection to the southeast of the Site which will have a direct link to Bristol Temple Meads, at one train service per hour.

7.7.111 Cumulative Development P21/06296/F is for the erection of railway station with 1 no. footbridge, temporary car park, access. The provision of this in the surrounding area to the Site will enhance connectivity and opportunities for ease of access to the wider area.

7.7.112 To ensure that the Site facilitates multi-modal transport accessibility to The YTL Arena (cumulative Development 19/05500/P), changes have been made to the Metrobus route, as already agreed with South Gloucestershire Council and Cribbs Patchway Metrobus Extension. Changes to the Metrobus route to the east of the Site mean that buses will now arrive at the eastern edge of the masterplan at the new A38 access junction from the Horizon 38 development⁴⁶.

⁴⁶ The previous planning proposals and extant planning permissions on the Site addressed a number of concerns raised by SGC in relation to Public Right of Way and access across the Site which will be considered within the Proposed Development taking into account the infrastructure requirements as part of the implementation of the YTL Arena consent.

7.7.113 The route is then proposed to continue across the centre of the masterplan along 'Runway Avenue' within dedicated bus lanes, before connecting to San Andreas Roundabout. Three stops are provided: one at the eastern end of the masterplan shortly after entering the Site, serving employment uses, a second in the centre of the masterplan serving the retail and commercial uses, and a third close to San Andreas roundabout serving the western half of the Site and proposed schools. These stops will be shared with future local buses that will pass through the Site.

7.7.114 The route takes the Metrobus closer to the centre of the Proposed Development where much of the densest development is, ensuring the average distance to the public transport from any plot is significantly reduced.

7.7.115 The Proposed Development has been designed to move the urban centre away from 'Runway Avenue', allowing for the central spaces to be fully pedestrianised. The functional relationship of the urban square to The YTL Arena (cumulative Development 19/05500/P) and pedestrian promenades allows for the safe dispersal of YTL Arena visitors post events.

Recreation

7.7.116 As detailed within the Planning Statement submitted with this application, the Applicant seeks to deliver 26 ha of public open space by 2036. The provision includes informal recreation open space, natural and semi natural space, outdoor sports facilities, children and young people provision and allotments as detailed in **Table 7.19** below.

Table 7.19: Public Open Space Provision – 2036 Scenario

	Informal Recreational Open Space (m2)	Natural and Semi Natural Space (m2)	Outdoor Sports Facilities (m2)	Children and Young People (m2)	Allotments (m2)	Total (m2)
Proposed Development (total)	76,750	74,870	89,240	14,430	5,300	260,590

7.7.117 Furthermore, there will be a range of dedicated sports facilities including cricket pitches, hockey pitches and football pitches provided at the proposed on-site schools which will be accessible to the wider community as well as school population.

7.7.118 As demonstrated on the Landscape Parameter Plan (**Appendix A.2**), there will be provision of public open space and natural green space. The Proposed Development includes delivery of Brabazon Park which will be largest park delivered in Bristol since the post-war Castle Park. The Park has been scaled to contribute towards the experience of the YTL Arena (cumulative Development 19/05500/P), whilst providing a valuable local neighbourhood amenity.

7.7.119 The YTL Arena (cumulative Development 19/05500/P) in itself will be a key recreational resource to the site and the surrounding area by providing an exhibition space, main arena, festival hall and events hub each with supporting leisure and service facilities.

7.7.120 As detailed in **Section 7.6 – Embedded Mitigation**, this will be complimented by a varied network of green infrastructure north to south across the Site, to connect Filton Wood with Brabazon Park in front of the YTL Arena; Cribbs Causeway with Fishpool Hill and Charlton Common; and Charlton Hayes to Charlton Common and Brabazon Park. The green corridor along Henbury Trym watercourse will also be retained as part of the Proposed Development.

7.7.121 Embedded mitigation for the Proposed Development safeguards and enhances a number recreational resources including:

- Retention of areas of existing woodland, hedgerows and trees throughout, such as Filton Wood with an open space buffer around southern edge;
- Retention and enhancement to Henbury Trym in the west of the Site; and
- Listed hangar 16S will also be provided as a public space setting to showcase the historic recreational value of the asset.

7.7.122 As detailed in **Table 7.9**, the Proposed Development will deliver the following recreation resources: Community hall; Library; and Sports hall. The quantum of development is however to be determined at the reserved matters stage.

7.7.123 Retention and enhancement of existing areas of green infrastructure and incorporation of areas of new planting throughout the Proposed Development will contribute to the character and visual amenity of the Site (as discussed further in **Chapter 11 – Landscape and Townscape**), and the landscape context as trees and hedgerows contribute to the green corridors network across the Site.

7.7.124 A wide north-south corridor forms part of the landscape strategy (**Appendix A.2**) as an enhanced ecological value within an environment that is currently absent. This corridor will further link adjacent habitats from Charlton Common to the south and the northern fringes of the Site (that ultimately link into the Henbury Trym buffer zone). The Proposed Development will strive for 10% Biodiversity Net Gain of which this corridor will contribute towards, as discussed further in **Chapter 12 - Biodiversity**.

7.7.125 The Cribbs Patchway New Neighbourhood Development Framework SPD⁴⁷ (SGC, 2014) requires developers of land within the allocation to appropriately balance the various open space requirements across the wider New Neighbourhood area (i.e. beyond individual site ownerships) and create attractive and useable spaces to ensure new and existing users have the best accessibility to a range of open spaces. The Proposed Development will do this through its provision, whilst also ensuring the delivery of community infrastructure in areas adjacent to public open space where possible.

7.7.126 The SPD further identifies that well planned, designed and managed green and blue infrastructure has the potential to deliver a wide range of benefits, including biodiversity and people's health and well-being. The Proposed Development will deliver this through the range of public access and recreational enhancements to be delivered such as Brabazon Park and Henbury Trym area.

7.7.127 A number of the wider cumulative development sites include provision of associated public open space and sporting facilities; and green infrastructure integrated with foot and cycle paths (PT14/0565/O; P21/08021/RM); provision of youth play space (P21/08021/RM; PT15/4165/F); and a variety of informal open space, public open space and landscaping (PT12/1930/O; PT16/4928/O; PT15/4165/F; PT14/1886/O; PT06/1001/O; PT16/4782/O; PT15/4386/O; 19/05500/P).

7.7.128 In accordance with the methodology detailed in **Section 7.4**, the recreation and public access enhancement associated with the Proposed Development against the extant planning consent would represent a High magnitude of change on the receptor (a Low sensitivity receptor) across the Study Area resulting in a **Permanent Moderate Beneficial** cumulative effect.

2048 Assessment

7.7.129 The 2048 Assessment assesses the operational effects of the Proposed Development assuming completion by 2048.

⁴⁷ SGC, 2014, CPNN Development Framework SPD

Construction

Capital Expenditure

7.7.130 As discussed in **Section 7.4 – Methodology**, an estimated capital expenditure of £2.26 billion is required to deliver the Proposed Development.

Gross Construction Employment

7.7.131 Gross construction employment is estimated by dividing the capital expenditure figure above (£2.26 billion) by the average turnover required to support an employee in the construction sector across the South West.

7.7.132 Analysis of the Department for Business, Energy and Industrial Strategy (BEIS) Business Population Estimates for The UK and Regions 2021⁴⁸ suggests a turnover of £123,448 is required on average to support a single employee. Applying the UK Government GDP Deflator to uprate this too 2022 prices⁴⁹, results in a figure of £125,643.

7.7.133 The construction of the Proposed Development is therefore estimated to support 18,027 gross temporary construction PYE over the 24-year construction programme. This would equate to 1,803 gross FTE jobs⁵⁰.

Net Construction Employment

7.7.134 Only a proportion of total construction employment would occur within the Labour Market Study Area due to mobility of labour and competition from external construction firms.

7.7.135 To take account of these factors, the additionality assumptions detailed in **Table 7.20** below have been used to convert the estimated gross construction employment into overall net construction phase employment. We have held the additionality assumptions to be the same as those set out above for 2036 which we think is cautious as in reality they may have reduced slightly over time.

Table 7.20: Construction Additionality Assumptions

Factor	Value	Rationale
Deadweight	20%	In the absence of the Proposed Development occurring there would likely be continued development interest in the Site from the current owner (the Applicant) through delivery of the extant permission.
Leakage	25%	Given the scale of the Proposed Development a medium level of leakage is allowed for recognising that 25% of the employment opportunities will be taken by residents from outside the Study Area.
Displacement	50%	A medium level of displacement is also anticipated in recognition that the scale of construction activity and timeframe for the Proposed Development may displace construction firms and workers from other sites to this site.
Substitution	0%	We have not made any allowance for substitution as we do not consider it relevant for this type of employment activity.
Multiplier	2.17	This multiplier value is taken from the 2015 Input-Output Analytical Tables and applied to the net construction jobs

⁴⁸ Department for Business, Energy and Industrial Strategy (DBEIS) (2021) Business Population Estimates for The UK and Regions 2021, Table 19 – South West

⁴⁹ GDP Deflator figure applied: 1.01778434384693 (uprate 2021 prices to 2022 prices)

⁵⁰ 10 person years of employment to each full-time equivalent (FTE)

Factor	Value	Rationale
		position to reflect jobs supported in the construction supply chain through indirect supply chain effects.

7.7.136 Based on these additionality assumptions, the 18,027 gross construction PYE created by the Proposed Development is expected to support approximately 11,758 net temporary construction PYE jobs across the 24-year construction programme within the Labour Market Study Area. This is the equivalent to 1,176 net FTE jobs.

7.7.137 In accordance with the methodology detailed in **Section 7.4**, the net construction employment associated with the Proposed Development under the 2048 Assessment would represent a High magnitude of change on the Labour Market receptor (a Low sensitivity receptor) across the Study Area resulting in a **Long Term Moderate Beneficial** effect.

Key Business Sector

Construction

7.7.138 The construction of the Proposed Development is expected to result in some temporary construction displacement within the Labour Market Study Area.

7.7.139 There are 26,500 (5.25%) construction sector jobs in the Labour Market Study Area⁵¹. The construction of the Proposed Development is anticipated to support 11,758 net temporary construction PYE jobs which represents a 44.40% of the current employment in the construction sector.

7.7.140 The construction sector in the South West had a total output of £2.17 billion gross added value (GVA) in 2018⁵². Upated to 2022 prices this is £2.39 billion⁵³. The creation of 11,758 net temporary construction PYE jobs is anticipated to generate some £559.4 million in net GVA over the construction period. This would represent an uplift of 23.41% against current estimated output.

7.7.141 In comparison the extant planning consent results in £210.7 million net GVA. The Proposed Development is delivering an uplift £348.7 million.

7.7.142 In accordance with the methodology detailed in **Section 7.4**, the net construction employment associated with the Proposed Development would represent a High magnitude of change on the Labour Market receptor (a Low sensitivity receptor) across the Study Area resulting in a **Long Term Moderate Beneficial** effect.

Recreation and Public Access Study Area

7.7.143 As detailed in **Section 7.6 - Embedded Mitigation**, a CEMP will be implemented for each phase to reduce the risk of any likely significant adverse effects on environmental receptors as a result of construction activities, and to minimise disturbance to local residents. Of relevance to this assessment, the CEMP will include measures and procedures to manage public access and amenity effects during construction, including to existing residential development and open and community space. A Framework CEMP is provided at **Appendix A.9** and will be secured by planning condition.

7.7.144 Recreation and public access associated with construction of the Proposed Development to 2048 would result in a Low magnitude of change on the recreation and public access receptor

⁵¹ ONS, 2020, Business Register and Employment Survey.

⁵² ONS, 2019, Regional Gross Value Added (Balanced) by Industry: Local Authorities by NUTS1 Region: UKK South West.

⁵³ HM Treasury, 2022, GDP Deflators at Market Prices, and Money GDP (<https://www.gov.uk/government/collections/gdp-deflators-at-market-prices-and-money-gdp>)

(a Low sensitivity receptor as per **Table 7.7**), resulting in a **Long Term Minor/Negligible Beneficial** effect.

Operation

7.7.145 The Proposed Development will deliver the quantum of development as presented in **Table 7.21** below.

Permanent Table 7.21: 2048 Quantum of Proposed Development

Element	Quantum of Development
Houses (number)	1,800
Apartments (number)	4,700
Office (NIA sqm) (<i>aka Business Offices and R&D - B1a</i>)	270,000
Industrial (NIA sqm) (<i>aka General Industrial - B1b/c and B2</i>)	55,000
Extra Care (number)	600 units
Student Accommodation (NIA sqm)	55,000
University (NIA sqm)	55,000
Retail (m2) (<i>aka Town Centre Uses</i>)	25,000
Hotel (3 hotels)	660 bed

7.7.146 The provision of each of these spaces will have associated employment opportunities. As shown in **Table 7.22** below, employment density assumptions⁵⁴ have been applied to the proposed floorspace quantum to calculate likely gross employment requirements for each employment generating use within the Proposed Development. This is expressed in terms of gross number of FTE workers likely to be directly employed in support of each operational use. Additionality assumptions from **Table 7.20** have been applied to calculated net FTE jobs.

Table 7.22: Predicated Employment per Operational Use – Proposed Development 2048

Land Use	Gross Floorspace (NIA)	Job Density (sqm per job)*	Gross Jobs (FTE)**	Net Jobs (FTE)
Office (m2) (<i>aka Business Offices and R&D - B1a</i>)	229,500	10	22,950	11,154
Industrial (m2) (<i>aka General Industrial - B1b/c and B2</i>)	46,750	45	1,039	505

⁵⁴ Employment Density Guide 3rd edition

Land Use	Gross Floorspace (NIA)	Job Density (sqm per job)*	Gross Jobs (FTE)**	Net Jobs (FTE)
Extra Care (number)	600 units	-	342	166
University (m2)	46,750	-	1,000	486
Retail (m2) (aka Town Centre Uses)***	16,250	17	956	465
Hotel (3 hotels)	660	1 job per 3 rooms	220	107
Education Provision: 0.4ha of land for 1 x Nursey (East) for up to 72 places 0.4ha of land for 1 x Nursery (West) for up to 72 places 2.0ha of land for 1 x Primary School (East) 2FE 3.0ha of land for 1 x Primary School (West) 3FE 8.31ha of land for 1 x Secondary School (South) 7FE	-	-	240	117
Total			26,747	12,999

*applied to NIA – using a net to gross ratio of 0.85

**figure presented assume 100% occupancy in line with the HCA guidance

***retail NIA calculated at a ratio of 0.65

7.7.147 As presented in **Table 7.22** above, the Proposed Development is estimated to support 26,747 gross FTE jobs and 12,999 net FTE jobs.

7.7.148 It is of note that whilst 55,000 sqm (NIA) of Student Accommodation will be delivered by 2048, there will likely be only a small amount of additional employment associated with these uses and this is unknown at this point so has been set to zero for this analysis. This is however subject to change, following reserved matters.

7.7.149 The additional provision of these potential employment opportunities will stimulate GVA throughout the Labour Market Study Area.

7.7.150 In accordance with the methodology detailed in **Section 7.4**, the gross operational employment associated with the Proposed Development would represent a High magnitude of change on the Labour Market receptor (a Low sensitivity receptor) across the Study Area resulting in a **Permanent Moderate Beneficial** effect.

Key Business Sector

7.7.151 Once completed the Proposed Development will have the following effect on the identified key business sector.

Wholesale and Retail

7.7.152 Retail provision within the Proposed Development result in a total of 956 Gross FTE Jobs and 465 Net FTE Jobs as presented in **Table 7.22** above.

7.7.153 Based on an average GVA per head in 2022 prices of £39,847.45, the creation of 465 Net FTE Jobs is anticipated to generate some £18.53 million net GVA.

7.7.154 It is of note, that a separate Retail Impact Assessment has been submitted alongside the application. This should be read in conjunction with this Chapter for further detail on the potential retail and leisure capacity at the Site.

7.7.155 In accordance with the methodology detailed in Section 7.4, the gross operational employment associated with the Proposed Development would represent a High magnitude of change on the Labour Market receptor (a Low sensitivity receptor) across the Study Area resulting in a **Permanent Moderate Beneficial** cumulative effect.

Housing Market Effects

7.7.156 By 2048, the Proposed Development will have delivered an additional 3,588 totalling 8,600 dwellings (including extra care and student accommodation), detailed in **Table 7.23** below. There will be a total of 6,500 residential dwellings (houses and apartments) provided, which is 3,825 dwellings more than the delivery of 2,675 dwellings in the extant planning consent.

Table 7.23: Units to be delivered by the Proposed Development

Type of unit	Number of units delivered between 2036 and 2048*	Total units delivered by 2048
Houses	920	1,800
Apartments (2-bed)	1,905	4,700
Extra Care (1-bed)	-	600
Student Accommodation	763	1,500
Total	3,588	8,600

Demographics

7.7.157 As presented in **Section 7.4 – Methodology**, population yield calculations are based upon the average person per dwelling figures provided by the Applicant in agreement with SGC.

Table 7.24: Population Yield – Proposed Development (2048)

Type of Unit	Average Person per Dwelling	Units	Residents
Houses and	2.4	1,800	4,320
Apartments (2-bed)	1.5	4,700	7,050
Extra Care (1-bed)	1	600	600
Student Accommodation	1	1,500	1,500
Total		8,600	13,470

7.7.158 Both the Core Strategy (Policy CS15) and the NPPF make clear that the housing requirement is a minimum target and that there is no limit on the supply of housing. The Proposed Development will deliver 6,500 residential dwellings (homes and apartments) exceeding the CPNN allocation (5,700 dwellings) by 800 residential dwellings.

7.7.159 The percentage provision of affordable housing for the Proposed Development will be agreed through a viability appraisal.

7.7.160 In accordance with the methodology detailed in **Section 7.4**, the housing provision associated with the Proposed Development would represent a High magnitude of change on the housing market receptor (a High sensitivity receptor) across the Study Area resulting in a **Permanent Substantial Beneficial** effect.

Local Centres

7.7.161 The average weekly household expenditure per person on goods and services in the South West (uprated to 2022 prices) was £276.80 as shown in **Table 7.17**. Applying this to the 2048 population would result in £108.68 million from the Proposed Development. Broken down this is as follows⁵⁵:

- £26.00 million from 1,800 homes;
- £67.65 million from 4,700 apartments;
- £4.318 million from 600 extra care units; and
- £10.80 million for 1,500 student accommodation.

7.7.162 In accordance with the methodology detailed in **Section 7.4**, the retail expenditure associated with the Proposed Development would represent a High magnitude of change on the Wholesale and Retail Key Business Sector receptor (a Low sensitivity receptor) across the Study Area resulting in a **Permanent Moderate Beneficial** effect.

Education

7.7.163 As noted in **Section 7.4**, there is no detailed housing mix available for the 6,500 residential units (homes and apartments) to be delivered by 2048. Furthermore given the time horizon up to 2048, there is uncertainty regarding the baseline conditions applicable to the educational assessment at this time including the capacity of schools (including that of nurseries) and the appropriate pupil product ratio to be applied in light of any demographic changes.

7.7.164 Given the above, the following is a qualitative assessment of the effects of the Proposed Development on education up to 2048.

Nursery

7.7.165 The 2036 assessment identified a shortfall in nursery provision across the Education Study Area. However, it is anticipated that some or all of this demand would be met by commercial nursery provision though the quantum of development has not been specified at this stage.

7.7.166 Development beyond 2036, and therefore the 2048 Assessment, is likely to put additional demand on nursery provision. This would require to be met through commercial or additional state nurseries or a combination of the two. It is anticipated that any need for additional nursery provision post-2036 would be addressed at the appropriate future phase.

⁵⁵ The retail expenditure for extra care units and student accommodation has been half compared to that for homes and apartments. This to account for their reduce income and associated retail expenditure.

7.7.167 In accordance with the methodology detailed in **Section 7.4**, the nursery demand from the Proposed Development would represent a Low magnitude of change on the Education receptor (a High sensitivity receptor) across the Study Area resulting in a **Permanent Moderate Adverse** effect.

Primary

7.7.168 The 2036 assessment presented indicates that there will be substantial surplus capacity of 744 places within the proposed 3FE and 2FE primary school.

7.7.169 Given the limitations noted above for the 2048 assessment, there is uncertainty regarding the level of primary school provision that would be required to serve the Proposed Development. Assuming a similar housing mix and pupil product ratio (and therefore the same average pupil yield per housing unit), provision of a single 3 FE primary school may be sufficient to meet the needs of the Proposed Development (up to 2048) (i.e. the additional 2 FE primary school proposed may not be required to meet demand from the Proposed Development alone). This is illustrated in **Tables 7.25** and **Table 7.26** below. As a result there will likely be a surplus of primary education capacity to meet need across the wider Education Study Area.

Table 7.25: Proposed Development primary pupil yields up to 2048

Assessment Phase	Pupil Yield Primary	Average Pupil Yield per unit (primary)
Up to 2036 (3675 units)	306	0.083
2036 – 2048 (2825 units)	235	0.083
Proposed Development Total up 2048	541	0.083

Table 7.26: Primary pupil yield versus capacity of proposed schools

	3 FE Primary	2 FE Primary	Total
Capacity	630	420	1050
Pupil Yield	541	541	541
Surplus/excess Capacity	89	-121	509

7.7.170 Whilst there is uncertainty about this conclusion, in accordance with the methodology detailed in **Section 7.4**, the above assessment suggests the potential for a Medium magnitude of change on primary education for the education receptor (a High sensitivity receptor) across the Study Area resulting in a **Permanent Major Beneficial** effect.

Secondary

7.7.171 The 2036 assessment indicates that there will be surplus capacity of 988 spaces within the proposed the 7 FE secondary school.

7.7.172 Given the limitations noted above of the 2048 assessment, there is uncertainty regarding the level of secondary school provision that would be required to serve the Proposed Development (up to 2048) and the rest of the CPNN. Assuming a similar housing mix and

pupil product, the 7FE Secondary School provided within the 2036 position is assumed to have more than sufficient capacity to support demand from the Proposed Development. Indeed, a significant surplus of capacity is likely which could help meet any demand across the wider Education Study Area.

Table 7.27: Proposed Development primary pupil yields up to 2048

Assessment Phase	Pupil Yield Secondary	Average Pupil Yield per unit (secondary)
Up to 2036 (3675 units)	134	0.036
2036 – 2048 (2825 units)	103	0.036
Proposed Development Total up 2048	237	0.036

Table 7.28: Proposed Development secondary yield versus capacity of proposed schools

	7 FE Secondary
Capacity	1500
Pupil Yield	615
Surplus/excess	885

7.7.173 Whilst there is uncertainty about this conclusion due to the limitations noted above, in accordance with the methodology detailed in **Section 7.4**, the above assessment suggests the potential for a Medium magnitude of change on secondary school provision for the education receptor (a High sensitivity receptor) across the Study Area resulting in a **Permanent Major Beneficial** effect.

Further Education

7.7.174 The Proposed Development will deliver up to 55,000 sqm of further education floorspace. As noted at **Section 7.5** and **Appendix B.3**, the resident labour force is already weighted towards higher skilled employment with residents having obtained further education qualifications at a higher rate than the regional and national average. Assuming this trend continues to 2048, the delivery of further education through the Proposed Development will provide additional opportunities for local residents. It will moreover supplement the existing provision of the further education institutions within the Education Study Area

7.7.175 In accordance with the methodology detailed in **Section 7.4**, the effect associated with the Proposed Development would represent a Medium magnitude of change to further education on the education receptor (a High sensitivity receptor) across the Study Area resulting in a **Permanent Major Beneficial** effect.

Healthcare

Dentists

7.7.176 As patient roll information is not publicly available for dentist surgeries it is not possible to calculate the dentist to patient ratio. It is also acknowledged that the SGC IDP (2014) sets out

that Dental Services do not work to registered populations so there is no direct relationship between location of developments and dental practices.

- 7.7.177 As discussed in **Section 7.4** of the 122 dentist surgeries within the Study Area, where it is known if they are accepting new NHS patients or not, 45% (55 surgeries) are accepting new patients at this time.
- 7.7.178 By 2036 the population across the Study Area is expected to increase to 1,090,944 people; an increase of 32,671 (9.13%) on 2022 levels. Assuming that similar trends will continue to 2048, this will result in increased pressure on existing dentist provision.
- 7.7.179 As set out in **Table 7.24**, the Proposed Development would result in **13,470** new residents by 2048 (taking account of housing, apartment, student accommodation and extra care units provision).
- 7.7.180 The 2036 position will include dental care provision. It is also acknowledged that the Applicant has confirmed that they will work closely with prospective practices and deliver for the needs of the community where necessary and practicable as the population across the site grows. It is therefore assumed that the dental provision would be sufficient to meet the identified need up to 2048.
- 7.7.181 In accordance with the methodology detailed in **Section 7.4**, the Proposed Development would represent a Negligible magnitude of change on the healthcare receptor (a Medium sensitivity receptor) across the Study Area resulting in a **Permanent Negligible** effect.

GP's

- 7.7.182 As noted in **Section 7.5**, there are currently 1,006,909 total patients and 869 total GPs across 105 GP surgeries in the Healthcare Study. The average GP to patient ratio is 1:1,158. This is below the SGC IDP (2014) requirement of 1 GP per 1,700 population.
- 7.7.183 By 2036 the population across the Study Area is expected to increase to 1,090,944 people; an increase of 32,671 (9.13%) on 2022 levels. Assuming that similar trends will continue to 2048, this will result in increased pressure on existing GP provision.
- 7.7.184 As set out in **Table 7.15** the Proposed Development would deliver 7,642 new residents beyond the 2036 position. This takes account of mainstream housing, student accommodation and extra care units.
- 7.7.185 As set out in **Table 7.24**, the Proposed Development would result in **13,470** new residents by 2048 (taking account of housing, apartment, student accommodation and extra care units provision).
- 7.7.186 It is acknowledged the embedded mitigation associated with the extant planning consent included the delivery of a new 6 GP surgery. In comparison, the Proposed Development (2036) may deliver a larger surgery with an additional 4 GPs to address the additional population that would result from the Proposed Development. It has been assumed that this would be delivered by 2036.
- 7.7.187 It is also acknowledged that the Applicant has confirmed that they will work closely with prospective practices and deliver for the needs of the community where necessary and practicable as the population across the site grows. It is therefore assumed that the GP provision would be sufficient to meet the identified need up to 2048.
- 7.7.188 In accordance with the methodology detailed in **Section 7.4**, the healthcare associated with the Proposed Development up to 2048 would represent a Negligible magnitude of change on the healthcare receptor (a Medium sensitivity receptor) across the Study Area resulting in a **Permanent Negligible Adverse** effect.

Recreation and Public Access

Public Access

- 7.7.189 As discussed in **Chapter 8 – Transport**, there are a number of PRow located within the northern part of the Site, as shown on **Figure 7.7** in **Appendix B.3**. Access to these routes will be maintained during operation of the Proposed Development, with details of any revised routes as required to be agreed in consultation with SDC.
- 7.7.190 Transport Phases 2, 3 and 4 will enable the remaining 2,825 homes, office and other uses to be delivered through an increasing number of Metrobus services per hour per direction. Train services per hour per direction to and from Bristol Temple Meads will increase, with 2 services per hour per direction to and from Bristol Parkway being introduced at Transport Phase 3. Transport Phase 3 also sees the introduction of 500 Park and Ride spaces and by Transport Phase 4 a Mass Transit Network is anticipated to be in place. See **Chapter 8: Transport and Access** for further information.
- 7.7.191 It is acknowledged that WECA has invested £1.5 million to assess options for mass transit and investigate and develop possible routes for the Proposed Development; consultation is anticipated this year:⁵⁶

Recreation

- 7.7.192 Throughout the delivery of the Proposed Development, there will be a continued enhancement to recreational open space, natural and semi natural space, outdoor sports facilities, children and young people provision and allotments.
- 7.7.193 In accordance with the methodology detailed in **Section 7.4**, the public access and recreation enhancements associated with the Proposed Development would represent a High magnitude of change on the receptor (a Low sensitivity receptor) across the Study Area resulting in a **Permanent Moderate Beneficial** effect.

7.8 Further Mitigation and Enhancement

2036 Assessment

Education

- 7.8.1 The assessment has shown that there is no need for additional primary school or secondary school provision to accommodate the Proposed Development up to 2036. Surplus capacity is being provided within the provision for the Proposed Development and the wider CPNN allocation. However, a shortfall in nursery provision has been identified though this may be met through commercial nursery provision as part of the Proposed Development up to 2036. It is anticipated that nursery provision will be addressed at the reserved matters stage.

Healthcare

- 7.8.2 The Proposed Development includes provision of dental care however due to the outline nature of the application, a quantum of development is not provided. This is to be determined at the reserved matters stage. It is assumed that sufficient dental care provision will be provided to meet demand from the Proposed Development.
- 7.8.3 The Planning Statement proposes the provision of a GP practice. It is assumed that this would be sufficient to satisfy demand from the Proposed Development and CPNN taking into account the 2036 position.

⁵⁶ <https://www.bristol.gov.uk/streets-travel/mass-transit-public-transport-plans>

2048 Assessment

Education

- 7.8.4 The assessment has identified a shortfall in nursery provision to 2036, though this unmet demand could be met wholly or in part by commercial nursery provision. Additional demand will be placed on nursery provision up to 2048 which could be met through commercial or state nursery provision, or a combination of the two. It is anticipated that this would be addressed at the appropriate future phases of development, as

Healthcare

- 7.8.5 As noted above the Proposed Development includes provision of dental care however due to the outline nature of the application, a quantum of development is not provided nor is timing specified. This is to be determined at the reserved matters stage. It is assumed that sufficient dental care provision will be provided to meet demand from the Proposed Development up to 2036.
- 7.8.6 It has been assumed that the GP practice that will be delivered by 2036 would be sufficient to meet demand up to 2048.

7.9 Residual Effects

- 7.9.1 The assessment concludes by reporting the level and significance of likely residual socio-economic effects for the 2036 assessment (**Table 7.25**) and the 2048 assessment (**Table 7.26**), taking account of all proposed further mitigation measures discussed above.
- 7.9.2 Residual impacts are defined as those impacts that remain following the implementation of mitigation measures.
- 7.9.3 If residual significant adverse effects are identified, the requirement for monitoring will be considered.

2036 Assessment

Table 7.29: Residual Effects – 2036

Potential Effect	Duration	Impacted Receptor	Receptor Sensitivity	Residual Magnitude of Change	Residual Effect Level	Residual EIA Significance
Construction Phase						
Net Construction Employment	Long Term	Labour Market	Low	High	Moderate Beneficial	Significant
Key Business Sector – Construction	Long Term	Labour Market	Low	High	Moderate Beneficial	Significant
Public Access and Recreation	Long Term	Public Access and Recreation	Low	Low	Minor/Negligible Beneficial	Not Significant
Operational Phase						
Net Operational Employment	Permanent	Labour Market	Low	High	Moderate Beneficial	Significant
Key Business Sector – Wholesale and Retail	Permanent	Labour Market	Low	High	Moderate Beneficial	Significant

Potential Effect	Duration	Impacted Receptor	Receptor Sensitivity	Residual Magnitude of Change	Residual Effect Level	Residual EIA Significance
Housing	Permanent	Housing Market	High	High	Substantial Beneficial	Significant
Local Centres	Permanent	Labour Market	Low	High	Moderate Beneficial	Significant
Education - Nursery	Permanent	Education	High	Medium	Moderate Adverse	Significant
Education – Primary	Permanent	Education	High	Medium	Major Beneficial	Significant
Education – Secondary	Permanent	Education	High	Medium	Major Beneficial	Significant
Education – Further Education	Permanent	Education	High	Medium	Major Beneficial	Significant
Healthcare	Permanent	Healthcare	Medium	Low/Negligible	Minor/Negligible Beneficial	Not Significant
Public Access and Recreation	Permanent	Public Access and Recreation	Low	High	Moderate Beneficial	Significant

2048 Assessment

Table 7.30: Residual Effects – 2048

Potential Effect	Duration	Impacted Receptor	Receptor Sensitivity	Residual Magnitude of Change	Residual Effect Level	Residual EIA Significance
Construction Phase						
Net Construction Employment	Long Term	Labour Market	Low	High	Moderate Beneficial	Significant
Key Business Sector – Construction	Long Term	Labour Market	Low	High	Moderate Beneficial	Significant
Public Access and Recreation	Long Term	Public Access and Recreation	Low	Low	Minor/Negligible Beneficial	Not Significant
Operational Phase						
Net Operational Employment	Permanent	Labour Market	Low	High	Moderate Beneficial	Significant
Key Business Sector – Wholesale and Retail	Permanent	Labour Market	Low	High	Moderate Beneficial	Significant
Housing	Permanent	Housing Market	High	High	Substantial Beneficial	Significant
Local Centres	Permanent	Labour Market	Low	High	Moderate Beneficial	Significant
Education - Nursery	Permanent	Education	High	Medium	Moderate Adverse	Significant
Education – Primary	Permanent	Education	High	Medium	Major Beneficial	Significant

Potential Effect	Duration	Impacted Receptor	Receptor Sensitivity	Residual Magnitude of Change	Residual Effect Level	Residual EIA Significance
Education – Secondary	Permanent	Education	High	Medium	Major Beneficial	Significant
Education – Further Education	Permanent	Education	High	Medium	Major Beneficial	Significant
Healthcare	Permanent	Healthcare	Medium	Low/Negligible	Minor/Negligible Beneficial	Not Significant
Public Access and Recreation	Permanent	Public Access and Recreation	Low	High	Moderate Beneficial	Significant

7.10 Monitoring

7.10.1 The 2036 Assessment and 2048 Assessment have identified Moderate Adverse effects on nursery provision. As such, this will be monitored and agreed with SGC as appropriate.

7.11 Summary

7.11.1 **Chapter 7 – Socio-Economics** provides an assessment of the likely significant socio-economic effects from the construction and operation of the Proposed Development.

7.11.2 The 2036 Baseline considers the baseline conditions anticipated to continue in absence of the Proposed Development being delivered. This includes delivery of the extant planning consent.

7.11.3 This impact assessment has been taken across a two stage process:

- The 2036 Assessment considers the construction and operational effects of the proportion of the Proposed Development that is expected to be completed up to 2036. This corresponds to the completion of Transport Phase 1. This assessment is inherently cumulative as discussed in the **‘Approach to Cumulative Impact Assessment’** subheading of **Section 7.4 – Methodology**. The assessment presented considers the effects of delivering the proposed development (ie the net uplift) against the extant planning consent; and
- The 2048 Assessment assesses the effects of the Proposed Development due for completion by 2048, therefore resulting in a 24-year construction programme. This corresponds to Transport Phases 2, 3 and 4

7.11.4 Taking account of relevant additional factors, the assessment examines likely effects from the Proposed Development on the labour market, the key business sectors, housing market education, healthcare, public access and recreation. The assessment has been informed by a baseline analysis of current environment conditions within assessed Study Areas.

7.11.5 The principal aspects considered within this assessment include:

- Direct, indirect and induced employment / labour market effects during the construction and operational phases of the Proposed Development;
- Direct effects on housing delivery and the housing market during the operational phase of the Proposed Development resulting from the provision of up to 6,500 dwellings;
- Indirect and induced retail expenditure effects resulting from additional spending power of new residents within the Proposed Development during the operational phase;

- Direct and indirect effects resulting from housing delivery on recreation, public access, and access to open space during the construction and operational phases of the Proposed Development. It is to be noted that public access and accessibility has been assessed in **Chapter 8 – Transport and Access** with findings relevant to socio-economics presented within this Chapter;
- Indirect effects resulting from housing delivery during the operational phase of the Proposed Development on: healthcare (GP and dental surgeries); and education (nursery, primary, secondary and higher education).

7.11.6 Likely socio-economic effects were assessed with reference to the following Study Areas:

- **Housing Market Study Area:** defined by the SGC administrative boundary. The Housing Market Study Area is presented in Appendix B.1, Figure 7.1;
- **Labour Market Study Area:** the local authority boundaries of SGC, BCC and NSC. The Labour Market Study Area is presented in **Appendix B.1, Figure 7.2**;
- **Education Study Area:** defined as nurseries and primary schools within 3.2km (2 miles) and secondary schools and further education within 4.8km (3 miles) of the Site. The Education Study Area is presented in **Appendix B.1, Figures 7.3, 7.4 & 7.5**;
- **Healthcare Study Area:** defined in line with the NHS Bristol, North Somerset and South Gloucestershire Clinical Commissioning Group (CCG) area. The Healthcare Study Area is presented in **Appendix B.1, Figure 7.6**; and
- **Recreation and Public Access Study Area:** the Site, the surrounding area within 1km (0.62 miles) of the Site boundary. It is noted that public access has been assessed in **Chapter 8 – Transport and Access** with findings relevant to socio-economics presented within this Chapter. The Recreation and Public Access Market Study Area is presented in **Appendices B.1, Figure 7.7 and Figure 7.8**.

7.11.7 Taking account of embedded mitigation, further mitigation, the sensitivity of identified receptors and the magnitude of predicted socio-economic changes, the assessment concludes that the Proposed Development is likely to result in the following residual effects:

2036 Assessment

Construction

- **Net construction employment:** 901 gross FTE jobs or 588 net FTE from the Proposed Development.. Resulting in a Long Term Moderate Beneficial cumulative effect.
- **Key business sector - construction:** £279.70 million in net GVA over the construction period from the Proposed Development. Resulting in a Long Term Moderate Beneficial cumulative effect.
- **Public access and recreation:** a CEMP will be implemented for each phase to reduce the risk of any likely significant adverse effects on environmental receptors as a result of construction activities. Resulting in a Long Term Minor/Negligible Beneficial cumulative effect.

Operation

- **Net operational employment:** 8,354 gross FTE jobs or 4,060 net FTE jobs from the Proposed Development. Resulting in a Permanent Moderate Beneficial cumulative effect.

- **Key business sector – wholesale and retail:** 80 Net FTE Jobs is anticipated to generate some £3.19 million net GVA from the Proposed Development. Resulting in a Permanent Moderate Beneficial cumulative effect.
- **Housing market:** The Proposed Development will provide 880 houses, 2,795 apartments, 600 extra care beds and 737 bed student accommodation. Resulting in a Permanent Substantial Beneficial cumulative effect.
- **Local centres:** £62.52 estimated household expenditure by residents per annum in total from the Proposed Development. Resulting in a **Permanent Moderate Beneficial** cumulative effect.
- **Education – nursery:** The Proposed Development will deliver two new nurseries in line with the extant planning consent. The demand resulting from the Proposed Development would exceed this capacity however this demand is anticipated to be met wholly or in part by commercial nurseries to be delivered as part of the Proposed Development, the quantum of which has not been specified but will be addressed at the reserved matters stage. Resulting in a **Permanent Moderate Adverse** cumulative effect.
- **Education – primary:** Two new primary schools are to be provided through the Proposed Development. This would meet the demand of the Proposed Development with surplus capacity to support demand requirements of the Education Study Area. Resulting in a **Permanent Major Beneficial** cumulative effect.
- **Education – secondary:** A new 7 FE secondary school is proposed which would more than satisfy the need for the Proposed Development and the wider CPNN, resulting in a surplus in capacity to meet needs across the Education Study area. The secondary school provision would therefore result in a **Permanent Major Beneficial** cumulative effect.
- **Education – further education:** The Proposed Development will deliver up to 11,025 sqm of further education buildings by 2036. This will result in a **Permanent Major Beneficial** cumulative effect.
- **Healthcare – GP's:** A new GP medical practice is proposed as part of the Proposed Development. Whilst the size of medical practice is subject to agreement with SGC, a 10 GP practice is suggested. This will be sufficient to meet demand associated with the Proposed Development and CPNN in the context of the 2036 assessment resulting in a **Permanent Minor Beneficial** cumulative effect.
- **Healthcare – dentists:** The Proposed Development includes provision of dental care however due to the outline nature of the application, a quantum of development is not provided. It is assumed there will be sufficient dental provision to meet demand. This would result in a **Permanent Negligible Beneficial** cumulative effect.
- **Public access and recreation:** Enhancements to recreation and public access throughout the Proposed Development such as Brabazon Park and the lagoon, alongside provisions with the 2036 assessment results in a **Permanent Moderate Beneficial** cumulative effect.

2048 Assessment

Construction

- **Net construction employment:** 1,803 gross FTE jobs or 1,176 net from the Proposed Development. Resulting in Long Term Moderate Beneficial.
- **Key business sector - construction:** £559.4 million in net GVA over the construction period. Resulting in a Long Term Moderate Beneficial effect.

- **Public access and recreation:** a CEMP will be implemented for each phase to reduce the risk of any likely significant adverse effects on environmental receptors as a result of construction activities. Resulting in a Long Term Minor/Negligible Beneficial cumulative effect.

Operation

- **Net operational employment:** 12,999 net FTE jobs from the Proposed Development resulting in a Permanent Moderate Beneficial effect.
- **Key business sector – wholesale and retail:** £18.53 million net GVA from the Proposed Development resulting in a Permanent Moderate Beneficial effect,
- **Housing market:** 6,500 residential dwellings (houses and apartments), 600 extra care and 1,500 student accommodation from the Proposed Development. Resulting in a Permanent Substantial Beneficial effect.
- **Local centres:** £108.68 million estimated household expenditure by residents per annum in total from the Proposed Development. Resulting in a Permanent Moderate Beneficial effect.
- **Education – nursery:** No new nurseries are provided post 2036 as part of the Proposed Development. It is likely that development during this period would put further strain on nursery provision. It is anticipated that any need for additional nursery provision post-2036 would be addressed at the appropriate future phase. This would result in a **Permanent Moderate Adverse** cumulative effect.
- **Education – primary:** No additional primary provision is proposed between 2036 and 2048 as part of the Proposed Development, however provision at 2036 assessment is likely to exceed demand up to 2048, resulting in a surplus of capacity to meet demand elsewhere. This would result in a **Permanent Major Beneficial** cumulative effect.
- **Education – secondary:** No additional secondary provision is proposed between 2036 and 2048 as part of the Proposed Development, however provision at 2036 assessment is likely to exceed demand up to 2048 resulting in a surplus of capacity to meet demand elsewhere. This would result in a **Permanent Major Beneficial** cumulative effect.
- **Education – further education:** The Proposed Development will deliver up to 50,000 sqm of further education buildings by 2048. This will result in a **Permanent Major Beneficial** cumulative effect.
- **Healthcare – GP's:** A new GP medical practice is proposed as part of the Proposed Development, and it is assumed that this would be delivered up to 2036. Whilst no additional provision is proposed up to 2048, this provision is still sufficient to meet demand up to 2048. This will result in a **Permanent Minor Beneficial** cumulative effect.
- **Healthcare – dentists:** The Proposed Development includes provision of dental care however due to the outline nature of the application, a quantum of development is not provided. It is assumed there will be sufficient dental provision to meet demand. This would result in a **Permanent Negligible Beneficial** cumulative effect.
- **Public access and recreation:** Enhancements to recreation and public access throughout the Proposed Development resulting in a Permanent Moderate Beneficial effect.

7.12 References

- BCC (n.d.). *Mass transit and public transport plans for Bristol*, Bristol City Council [online] Available at: <https://www.bristol.gov.uk/streets-travel/mass-transit-public-transport-plans> [Accessed 3 April 2022].
- DBEIS (2021). *Business Population Estimates for the UK and Regions 2021*, Department for Business, Energy and Industrial Strategy [online]
- DfE (2014). *Home to School Travel and Transport Guidance*, Department for Education [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/575323/Home_to_school_travel_and_transport_guidance.pdf [Accessed 1 April 2022]
- H&CA (2014). *Additionality Guide, Fourth Edition*, Homes & Community Agency [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/378177/additionality_guide_2014_full.pdf [Accessed 15 March 2022].
- H&CA (2015). *Employment Density Guide, Third Edition*, Homes & Community Agency [online] Available at: https://www.kirklees.gov.uk/beta/planning-policy/pdf/examination/national_evidence/NE48_employment_density_guide_3rd_edition.pdf [Accessed 15 March 2022]
- HM Treasury (2022). *GDP deflators at market prices, and money GDP*. [online] Available at: <https://www.gov.uk/government/collections/gdp-deflators-at-market-prices-and-money-gdp> [Accessed 6 April 2022].
- MHC&LG (2019). *English indices of deprivation 2019*, Ministry of Housing, Communities & Local Government [online] Available at: <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019> [Accessed 3 April 2022].
- HM Treasury (2022). *The Green Book* [online] Available at: [The Green Book \(2022\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/the-green-book) [Accessed 19 February 2022]
- MHC&LG (2021). *National Planning Policy Framework*, Ministry of Housing, Communities & Local Government [online] Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>. [Accessed 1 April 2022]
- MHC&LG (2022). *Live tables on rents, lettings and tenancies (Table 600: numbers of households on local authorities' housing waiting lists, by district, England, from 1987)*, Ministry of Housing, Communities & Local Government [online] Available at: [Live tables on rents, lettings and tenancies - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/live-tables-on-rents-lettings-and-tenancies) [Accessed 16 March 2022]
- NHS Bristol, North Somerset and South Gloucestershire Clinical Commissioning Group (2022) February 2021, NHS Bristol, North Somerset and South Gloucestershire Clinical Commissioning Group Constitution, paragraph 2.1.1, page 11.
- ONS (2018) *Household Expenditure by Countries and Regions: Table A33*, Office for National Statistics [online] Available at: [Household expenditure by countries and regions: Table A33 - Office for National Statistics](https://www.ons.gov.uk/economy/grossdomesticproductgdp/datasets/regionalgrossvalueaddedbalanced) [Accessed 12 March 2022]
- ONS (2019). *Regional Gross Value Added (Balanced) by Industry: Local Authorities by NUTS1 Region: UK South West*, Office for National Statistics [online] Available at: <https://www.ons.gov.uk/economy/grossdomesticproductgdp/datasets/regionalgrossvalueaddedbalanced>

cedbyindustrylocalauthoritiesbyitl1region [Accessed 15 March 2022]

- ONS (2020). *Population Estimates – Local Authority based by Five Year Age Band*, Office for National Statistics [online] Available at: Population estimates - local authority based by five year age band - Nomis - Official Labour Market Statistics (nomisweb.co.uk) [Accessed 15 March 2022]
- ONS (2021) *Business Register and Employment Survey*, Office for National Statistics [online] Available at: Business Register and Employment Survey - Office for National Statistics (ons.gov.uk) [Access 20 March 2022]
- SGC (2013). *South Gloucestershire Local Plan Core Strategy 2006 – 2027*, South Gloucestershire Council [online] Available at: New Local Plan - Core Strategy.indd (southglos.gov.uk) [Accessed 18 February 2022]
- SGC (2014). *Cribbs / Patchway New Neighbourhood Development Framework SPD*, South Gloucestershire Council [online] Available at: 9726 Cribbs Patchway 2013 updated.indd (southglos.gov.uk) [Accessed 18 February 2022]
- SGC (2014). *South Gloucestershire Infrastructure Delivery Plan (IDP)*, South Gloucestershire Council [online] Available at: https://www.southglos.gov.uk/documents/Infrastructure-Delivery-Plan-Update-March-2014.pdf [Accessed 1 April 2022]
- SGC (2017). *SGC Policies, Sites and Places Plan*, South Gloucestershire Council [online] Available at: Policies, Sites and Places plan (PSP) | BETA - South Gloucestershire Council (southglos.gov.uk) [Accessed 20 March 2022]
- SGC (2017). *South Gloucestershire Joint Health and Wellbeing Strategy 2017 – 2021*, South Gloucestershire Council [online] Available at: South-Gloucestershire-Joint-Health-and-Wellbeing-Strategy-2017-21.pdf (southglos.gov.uk) [Accessed 1 April 2022]
- SGC (2020). *South Gloucestershire Authority Monitoring Report 2020*, South Gloucestershire Council [online] Available at: AMR-2020.pdf (southglos.gov.uk) [Accessed 15 March 2022]
- SGC (n.d.). *South Gloucestershire Local Plan 2020*, South Gloucestershire Council [online] Available at: South Gloucestershire New Local Plan | BETA - South Gloucestershire Council (southglos.gov.uk) [Accessed 12 March 2022]
- WECA (2021). *West of England Local Housing Needs Assessment (LHNA)*, West of England Combined Authority [online] Available at: LHNA_Final_Report_Sept_20211.pdf (westofengland-ca.gov.uk) [Accessed 2 April 2022]
- WECA (2021). *Employment Land Spatial Needs Assessment (ELSNA)*, West of England Combined Authority [online] Available at: ELSNA_Final_Report_June_20211.pdf (westofengland-ca.gov.uk) [Access 12 March 2022]
- WECA (2022). *West of England Spatial Development Strategy (SDS)*, West of England Combined Authority [online] Available at: Spatial Development Strategy - West of England Combined Authority (westofengland-ca.gov.uk) [Accessed 15 March 2022]