

SECTION 1 – ITEM 4

Application No:	18/P/5118/OUT	Target date:	10.04.2019
Applicant:	Bristol Airport Limited	Extended date:	17.02.2020
Parish Ward:	Wrington Wrington	Ward Councillor:	Councillor Steve Hogg
Proposal:	<p>Outline planning application, with some reserved matters included and others reserved for subsequent approval, for the development of Bristol Airport to enable a throughput of 12 million terminal passengers in any 12-month calendar period, comprising:</p> <ul style="list-style-type: none"> • 2no. extensions to the terminal building and canopies over the forecourt of the main terminal entrance; • erection of new east walkway and pier with vertical circulation cores and pre-board zones; • 5m high acoustic timber fence; • Construction of a new service yard; • erection of a multi-storey car park north west of the terminal building with five levels providing approximately 2,150 spaces; • enhancement to the internal road system including gyratory road with internal surface car parking and layout changes; • enhancements to airside infrastructure including construction of new eastern taxiway link and taxiway widening (and fillets) to the southern edge of Taxiway 'GOLF'; • the year-round use of the existing Silver Zone car park extension (known as 'Cogloop Phase 1') with associated permanent (fixed) lighting and CCTV; • extension to the Silver Zone car park to provide approximately 2,700 spaces (known as 'Cogloop Phase 2'); • the provision of on-site renewable energy generation • improvements to the A38 and its junction with Downside Road; • operating within a rolling annual cap of 4,000 night-flights between the hours of 23:30 and 06:00 with no seasonal restrictions; • revision to the operation of Stands 38 and 39; • landscaping and associated works. 		
Site address:	Bristol Airport, North Side Road, Felton, Wrington, BS48 3DP		

Summary of recommendation

It is recommended that subject to referral to the Secretary of State and the completion of a S106 legal agreement, this application be **APPROVED** subject to planning conditions. The full recommendation is set out at the end of this report.

Appendices

There are 4 appendices to this report.

Appendix 1 - index of the abbreviations used in this report

Appendix 2 - summary of all representations received.

Appendix 3 - details of the proposed heads of terms for the S106 agreement.

Appendix 4 - list of the current documents supporting the application.

Committee site inspection

A member site inspection was held on 14th June 2019.

Background and key planning history

Bristol Airport (BA) opened in 1957. Expansion in the 1960's saw extensions to the runway and passenger terminal. The 1980's brought a large growth in passenger numbers through the expansion of tour and charter markets. In the early 1990's the projected passenger growth was forecast to exceed the capacity of the terminal and with no scope for further extensions, plans were prepared for a new passenger terminal. Planning permission (ref no. 1287/91) granted in 1995 included a replacement passenger terminal and re-routing part of the A38 next to the airport. Both elements opened in 2000. At that time BA handled 2.1 million passengers per annum (mppa). This increased to 3.9 mppa by 2003 and 6.3 mppa by 2008.

In 2011, outline planning permission (ref no. 09/P/1020/OT2) was granted to increase the operational capacity of BA from 7.2 to 10 mppa. The included over 30 separate developments. The permission was subject to a Section 106 legal agreement. The main obligations in the S106 Agreement required BA to: fund new and more frequent public transport services to and from the airport; provide an environmental mitigation fund; develop a skills and employment plan; make financial contributions towards strategic infrastructure projects and undertake air quality monitoring. Bristol Airport Limited (BAL) has implemented most elements the 10 mppa permission, although some are still to be commenced or completed. An on-site hotel was built in 2015 under a separate planning permission (Ref No. 14/P/0314/F).

In 1997 BAL served 1.6 million passengers. Since then annual passengers have increased in all but one year. In 2019 BAL handled 8.9 million passengers. They expect to reach their present permitted capacity of 10 million passengers per annum (mppa) in 2021. To ensure that they can continue to meet passenger demands into the future, BAL are preparing a new Airport Master Plan. This will set a long-term strategy for phased growth of the airport to meet a projected increase in passenger numbers, which could increase up to 20 mppa by the mid 2040's. BAL's initial development strategy was set out in a document called: '*Your Airport, Your Views*', which was consulted on in 2018. The first phase of growth to achieve 12 mppa by the mid-2020s is the subject of this application.

Bristol Airport (BA)

BA is in the parish of Wrington, about 4km north-east from the centre of the village. It is 1.6km west of Felton and 3.2km west of Winford. Bristol city centre is about 11km north-east of the airport. The Mendip Hills Area of Outstanding Natural Beauty begins 3km south of the airport. The airport's main road access is from the A38. There are two roundabout entrances in to the airport from the A38: the northern access to the passenger terminal and adjoining car parks and a southern access, which serves the 'Silver Zone' car park and private aviation facilities.

The airport is approximately 196 hectares in area, and it is on an elevated plateau between 165–192 metres above Ordnance Datum. Most of BA is in the Green Belt, save for 44 hectares at its north side. This area, known as the 'Green Belt Inset', includes the passenger terminal, air traffic control tower, hotel, multi-storey car park and surface car parks. The central part of the airport comprises the runway, aircraft taxiways and the aircraft-stands. There are 32 aircraft stands at present, but the 10 mppa consent allows 3 more to be added. The numbering sequence is not however successive (for example there are no stand numbers 17-20) such that stand numbers continue up to stand 39. The south side of the airport includes private aviation buildings, a helicopter unit, fire station, new admin offices for BAL staff and long-stay car parks (the 'Silver Zone'). BA is open 24 hours a day, 365 days a year.

The Proposed Development

The application seeks outline planning permission, with some details ('reserved matters') included to increase the operational capacity of Bristol Airport from its current cap of 10 mppa up to 12 mppa. It comprises the following elements:

North Side of Airport

- A four-storey extension to the west side of the passenger terminal providing approximately 11,000 square metres of additional floor space.
- A two-storey extension to the south side of the passenger terminal providing approximately 3,600 square metres of additional floor space.
- Canopies over the forecourt entrance of the passenger terminal.
- A new passenger walkway approximately 275 metres long to the east side of the passenger terminal. This will have a floor area of approximately 3,000 square metres.
- A new eastern pier for passenger access to the eastern stands. This will have a floorspace of approximately 3,815 square metres.
- An additional multi-storey car park (MSCP3) to provide 2,150 spaces over 5 levels adjacent to the current MSCP. The MSCP will occupy a footprint of around 1.12 hectares.
- A two-lane (one-way) gyratory road system approximately 700 metres long.
- A new service yard to the west side of the passenger terminal and north of the western walkway. This will be used for the delivery of goods and as a waste management area. Its site area is approximately 0.4 hectare.

Central Area

- An aircraft taxiway link at the eastern end of the runway, approximately 170 metres long.
- Widening the southern edge of the northern most taxiway ('Taxiway GOLF'). This will have a site area of approximately 1.81 hectares.
- Changes to the current restrictions on aircraft stands 38 and 39 to allow:
 - the use of mobile power generators;
 - installation and use of aircraft auxiliary power units; and
 - use of aircraft engines for taxiing (as opposed to towing).

Southern Area

- Change the seasonal use of the 'Cogloop' 3,650 space car-park, which is currently only allowed to be used between May to October each year, to all-year-round use, with permanent fixed lighting and CCTV.
- An extension to the 'Silver Zone' car park comprising approximately 2,700 additional spaces for all-year-round use. This site will have a site area of approximately 5.1 hectares, and it is on agricultural land which adjoins current the operational boundary of the airport.

Night Flights

Condition 38 of 09/P/1020/OT2 (the 10 mppa permission) caps 'night time' flights (defined as 23:30-06:00 Hours) to 4000 per year, with a maximum of 3000 flights in the British Summer Time and 1000 movements in the British Winter Time. BAL propose to retain the annual cap of 4000 night-time flights at 12 mppa but remove the seasonal restrictions.

Off-Site Works

Alterations to the A38 highway at the Downside Road and West Lane junctions as well as carriageway improvements to a section of the existing A38. These are described in 'Issue 10' of this report.

The table below provides a breakdown of the proposed development and it identifies those 'reserved matters' included in this application.

Y	'Reserved Matter' included
N	'Reserved Matter' not included
N/A	'Reserved Matter' not needed

Development	Scale	Layout	Access	Appearance	Landscaping
West terminal extension (Phase 2)	Y	Y	Y	Y	N/A
South terminal extension	Y	Y	Y	Y	N/A
Canopies to the terminal building	Y	Y	N/A	Y	N
East walkway	N	N	N/A	N	N/A
East pier	N	N	N/A	N	N/A
Acoustic Barrier	N	N	N/A	N	N/A
MSCP (Phase 3)	N	N	N	N	N
Service yard	N	N	N	N	N
Gyratory road	N	N	N	N	N
Highway works	Y	Y	Y	Y	N/A
Taxiway widening	N	N	N/A	N	N/A
Eastern taxiway link	N	N	N/A	N	N/A
Year-round use of seasonal carpark	N	N	N/A	N	N/A
Silver Zone car park extension (Phase 2)	N	N	N	N	N
Operational change to night flight regime	N/A	N/A	N/A	N/A	N/A
Operational change to stands 38 and 39	N/A	N/A	N/A	N/A	N/A

The application is supported by drawings and reports including an Environmental Statement (ES) The scope of the ES was agreed under application reference 18/P/3502/EA2. The includes a description of the likely significant environmental effects and it examines direct, indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative environmental effects of the proposed development.

Phasing

The development would, if it is approved, be implemented on a phased basis over 6 years.

Construction Management

Construction compounds for each phase would be within the airport boundary. Construction assumes a six-day working week: 07:30-18:00 Hours Monday to Friday and Saturday 08:00-13.00 Hours, although some works may be necessary overnight. A Construction Environmental Management Plan would be agreed.

Planning Obligations

The application is supported by 'Heads of Terms' for a Section 106 Agreement. This proposes financial contributions or works in kind in respect of highway improvements; surface access; air quality; noise mitigation; environment and biodiversity mitigation; community / environmental improvements and employment and skills. This is considered in more detail in Issue 22 and Appendix 3 of this report.

Pre-Application work

Paragraphs 39-46 of the National Planning Policy Framework (NPPF) emphasise the importance of pre-application engagement on major planning applications. BAL undertook pre-application consultation with the Council (which included a member site visit); adjoining local authorities; statutory and non-statutory bodies; Parish Council's and the public in 2018. Their '*Consultation Feedback Report*' says 971 responses were received, which were categorised, reviewed and assessed. Most responses (66%) concerned surface access and other environmental matters including noise and carbon emissions, with socio-economic impacts being second highest (17%). Other comments challenged the need for an expansion; the level of car parking; why development is needed in the Green Belt; surface access and impacts on access roads. The '*Consultation Feedback Report*' summarises BAL's response.

Policy Framework

The development plan comprises, of relevance:

- North Somerset Core Strategy (the "CS") (adopted 10 January 2017)
- Sites and Policies Plan Part 1: Development Management Policies ("DMP") (adopted 19 July 2016)
- Sites and Policies Plan Part 2: Site Allocations Plan ("SAP") adopted 10 April 2018

The most relevant policies are as follows.

North Somerset Core Strategy (CS)

Policy Ref	Policy heading
CS1	Addressing climate change and carbon reduction
CS2	Delivering sustainable design and construction
CS3	Environmental impacts and flood risk management
CS4	Nature Conservation
CS5	Landscape and the historic environment
CS6	North Somerset's Green Belt
CS10	Transport and movement
CS11	Parking
CS12	Achieving high quality design and place making
CS20	Supporting a successful economy
CS22	Tourism Strategy
CS23	Bristol Airport
CS34	Infrastructure delivery and Development Contributions

Sites and Policies Plan Part 1: Development Management Policies (DMP)

Policy	Policy heading
DM1	Flooding and drainage
DM2	Renewable and low carbon energy
DM6	Archaeology
DM7	Non-designated heritage assets
DM8	Nature Conservation

DM9	Trees
DM10	Landscape
DM11	Mendip Hills Area of Outstanding Natural Beauty
DM12	Development within the Green Belt
DM20	Major Transport Schemes
DM24	Safety, traffic and infrastructure associated with development
DM26	Travel plans
DM27	Bus accessibility criteria
DM29	Car parks
DM30	Off-airport car parking
DM31	Air safety
DM32	High quality design and place making
DM33	Inclusive access into non-residential buildings and spaces
DM50	Bristol Airport
DM70	Development infrastructure
DM71	Development contributions / Community Infrastructure Levy

Other material policy guidance

National Planning Policy Framework (NPPF) 2019

The following is particularly relevant to this proposal:

Section No	Section heading
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2	Achieving Sustainable Development
4	Decision Making
6	Building a strong, competitive economy
8	Promoting healthy and safe communities
9	Promoting sustainable transport
12	Achieving well design places
13	Protecting Green Belt land
14	Meeting the challenge of Climate change, flooding and coastal
15	change
16	Conserving and enhancing the historic environment

The Government's aviation policy is set out in a series of documents including:

- 'Aviation Policy Framework' APF (2013);
- 'Beyond the Horizon – the future of UK aviation: next steps towards an aviation strategy ('Next Steps')' 2018;
- 'Airports National Policy Statement' 2018
- 'Beyond the Horizon – the future of UK aviation: making best use of existing runways' ('Making Best Use') 2018.

West of England Joint Local Transport Local Plan 2011-2026 (JLTP3)

JLTP3 is expected to be superseded by JLTP4 in the near future. JLTP4 will be considered at NSC's 'Full Council' in February 2020 followed by the 'West of England Joint Committee' in March 2020.

North Somerset Council Supplementary Planning Documents (SPD)

- North Somerset Landscape Character Assessment SPD (2018)
- North Somerset and Mendip Bats Special Area of Conservation (SAC) – Guidance on development (2018)
- Creating sustainable buildings and places SPD (adopted March 2015)
- Travel Plans SPD (adopted November 2010)
- Biodiversity and Trees SPD (adopted December 2005)

Emerging Policy

The Council is now preparing a new Local Plan that will provide a new spatial strategy for growth, allocations for development and strategic and non-strategic policies to guide decision making in North Somerset. Early engagement is expected to commence in Spring 2020. This has very low weight at this time.

Consultations

The Council has undertaken extensive consultation including the following:

- 8 other Local Authorities;
- All Town and Parish Councils in North Somerset;
- All elected Members of North Somerset Council;
- The Parish Council Airport Association, which comprises Parish Council's within and outside North Somerset;
- MP's whose constituencies are within or adjoin / near to North Somerset;
- Statutory Consultees;
- Other consultees;
- Occupants of just under 300 of the nearest dwellings to the airport.

Further publicity of the application has been made through the North Somerset Council Web Site and various media reports.

Consultation was undertaken after the application was registered. Two further rounds of consultation were carried out after substantive additional information was received.

As of 27 January 2020, 7,632 representations have been received. This includes 5,250 objections and 2,382 in support of the proposal. Representations are summarised in Appendix 2.

A separate petition with 2,190 signatures objecting to the application has been received. The grounds of objections are: climate change; carbon emissions; pollution; public health; noise; congestion; inadequate access and development in the Green Belt.

Full copies of all responses received can be viewed on the Council's website.

Incremental Growth at Bristol Airport

Some objectors comment on BAL's long-term aspiration is to develop the airport to serve up to 20 mppa by the mid 2040's. They say splitting ('*salami-slicing*') long-term growth across different planning applications (this being the first) is a deliberate tactic by BAL to downplay its long-term environmental impacts; in that each time a planning application for

growth is made, they contend that the net increase is modest against the consented baseline.

The Environmental Impact Assessment Regulations 2017 do however require applicants to carry out cumulative and interactive assessments. The European Commission (EC) Directive 2014/52/EU provides further clarity. The latter requires applicants to carry out Cumulative Effects Assessments (CEA) to consider the in-combination environmental impacts of other development. Other developments include those, within certain parameters that are approved, under current consideration at an advanced stage of preparation in a development plan. BAL's aspiration to grow beyond 12 mppa is not currently subject to published plans, local plan allocations or any other details that could reasonably be considered at this stage.

The planning system does not prevent applicants from applying for phased growth and planning applications should be decided on their merits. Furthermore, a decision on one planning application does not pre-determine the outcome of future planning applications.

Principal Planning Issues

The key planning issues relevant to the determination of this application are:

- Issue 1: Policy Overview and Key Principles
- Issue 2: Need for the proposed development and alternatives
- Issue 3: Socio-Economic Impacts
- Issue 4: Greenhouse Gas Emissions / Climate Change
- Issue 5: Noise Impacts
- Issue 6: Vibration
- Issue 7: Air Quality
- Issue 8: Surface Access Strategy
- Issue 9: Vehicle Trip Numbers and Highway Impacts
- Issue 10: Highway Works
- Issue 11: Vehicle Parking
- Issue 12: Green Belt
- Issue 13: Landscape and Visual Impacts
- Issue 14: Biodiversity
- Issue 15: Flood Risk and Drainage
- Issue 16: Land Quality
- Issue 17: Heritage Assets
- Issue 18: Appearance and Design
- Issue 19: Other impacts on residents
- Issue 20: Major Accidents and Disasters
- Issue 21: Public Health and Wellbeing
- Issue 22: Planning Obligations
- Issue 23: Interactive and Cumulative Impacts
- Issue 24: Summary and Planning Balance

Issue 1: Policy Overview

Section 70(2) of the Town and Country Planning Act 1990 and Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires planning applications to be determined in accordance with the development plan unless material considerations indicate otherwise. The development plan is set out earlier. Other material considerations include the NPPF; national aviation policy; emerging policy, relevant legislation, Planning

Practice Guidance (PPG), and representations to the application. The NPPF and aviation policy, which are statements of government policy carries substantial weight. Emerging policy is weighted according to its status and compliance with national policy.

The main objective of the council's Core Strategy is 'living within environmental limits' and facilitating sustainable development. The NPPF supports sustainable development, which is centred on three inter-dependent objectives: economic, social and environmental.

Policy CS23 (*'Bristol Airport'*) of the CS states that: *"proposals for the development of Bristol Airport will be required to demonstrate the satisfactory resolution of environmental issues, including the impact of growth on surrounding communities and surface access infrastructure"*. The NPPF says (para 104e) planning policies should: *"provide for any large-scale transport facilities that need to be located in the area, and the infrastructure and wider development required to support their operation, expansion and contribution to the wider economy."* Paragraph 104f requires planning policies to: *"recognise the importance of maintaining a national network of general aviation airfields, and their need to adapt and change over time – taking into account their economic value in serving business, leisure...and the Government's General Aviation Strategy."*

Policy CS20 of the CS focusses on *"Supporting a Successful Economy"*. Its objective is *"to provide at least 10,100 additional employment opportunities 2006–2026"*, and it recognises the value of BA as a major employer. The NPPF (para 80) says: *"Planning...decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development"*. Economic policy is considered further in 'Issue 3'.

Policies CS1, CS2 of the CS and DM2 of the DMP are concerned with addressing climate change and reducing greenhouse gas (GHG) emissions. They are consistent with *'meeting the challenge of climate change'* in section 14 of the NPPF. Para 148 of the NPPF says the planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. Para 150 says new development should be planned for in ways that avoid increased vulnerability to the range of impacts arising from climate change and can help to reduce greenhouse gas emissions. Para 153 expects planning decisions to comply with any development plan policies on local requirements for decentralised energy supply. Issue 4 of this report considers climate change policy and GHG issues in more detail.

Policy CS3 of the CS is also concerned with noise and air quality, amongst other environmental issues. It refers to the public's sensitivity to noise and its objective is to avoid and reduce adverse impacts from noise. This aligns closely with the Noise Policy Statement for England (NPSE) 2010, which aims to avoid, minimise, mitigate and where possible reduce significant adverse impacts on health and quality of life. Noise impacts are considered in detail in Issue 5 of this report. Air Quality policy is considered in Issue 7. Section 9 of the NPPF promotes sustainable transport. It says (para 102) development proposals should realise opportunities to promote and increase walking, cycling and greater use of public transport, and mitigate adverse effects of traffic and transport. Para 103 says significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. Policy CS10 of the CS and DM24 of the DMP have the same objectives.

The 'West of England Joint Local Transport Plan' 2011-2026 (JLTP3) recognises the significant positive impact that BA has on the region's economy and supports its growth.

JLTP3 is expected to be superseded in the near future by JLTP4. JLTP3 and 4 recommend that there should be improved surface connectivity to BA by public transport and road and identify two major investment proposals to do this. The first is a new mass transit route between BA and Bristol with initial delivery of A38 multi-modal corridor improvements expected by 2027 and the Mass Transit infrastructure being in place by 2034. The second proposal includes major improvements to the A38 between Bristol and Weston-super-Mare including a new junction 21A at Weston-super-Mare and improvements on the A38 between Langford and BA. Additional schemes may be identified at the local access level that would further improve surface access to the airport, subject to design and feasibility investigations. JLTP4 recognises that public transport travel will not however be an option to some, and the demand for driving to the airport needs to be managed. Transport policies (and parking) are considered further Issues 8-11 of this report.

Section 13 of the NPPF is concerned with protecting Green Belt land. Paragraph 134 sets out the purposes of the Green Belt and paras 143-147 deals with proposals affecting the Green Belt. It says 'inappropriate' development is harmful to the Green Belt and it should not be approved except in 'very special circumstances' and only where this clearly outweighs any harm to the Green Belt, or any other harm. Policy CS6 of the CS has the same objectives. Policy DM12 and 50 of the DMP sets out the policy for assessing development proposals within BA's 'Green Belt Inset' (GBI).

Policy DM50 states that development will be permitted in the GBI provided that:

- *it is required in connection with the movement or maintenance of aircraft, or with the embarking, disembarking, loading, discharge or transport of passengers, livestock or goods;*
- *environmental impacts such as emissions are minimised, and there is no unacceptable noise impact;*
- *it is suitably sited, designed and landscaped so as not to harm the surrounding landscape; and*
- *appropriate provision is made for surface access to the airport, including highway improvements and/or traffic management schemes to mitigate the adverse impact of airport traffic on local communities, together with improvements to public transport services.*

Policy CS3 of the CS and DM1 of the DMP are concerned with flood risk management. The NPPF deals with this in paras 155-165. The development plan and NPPF says new development should be directed: "away from areas at highest flood risk (whether existing or future). Where development is necessary in such areas, development should be made safe for its lifetime without increasing flood risk elsewhere." Flood risk policy is considered in more detail in Issue 15.

The Government's Aviation Strategy is set out in:

- 'Aviation Policy Framework' 2013 (APF);
- 'Beyond the Horizon – the future of UK aviation: next steps towards an aviation strategy ('Next Steps')' 2018;
- 'Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England' 2018 (ANPS); and
- 'Beyond the Horizon – the future of UK aviation: making best use of existing runways' 2018.

Note: At the time of preparing this report the ANPS is subject to a legal challenge in the Court of Appeal.

A key priority of the APF is to make better use of existing runway capacity at UK airports, while reducing pressure on London airports. It also says (para 1.20): “*new or more frequent international connections attract business activity, boosting the economy of the region and providing new opportunities and better access to new markets for existing businesses*”. Economic benefits should however be balanced against environmental impacts. On noise, the APF says the objective is to limit and where possible reduce the number of people significantly affected by aircraft noise, while on air pollution, the objective is to protect health by meeting relevant legislation. For surface access, proposals should demonstrate how the airport will ensure easy, reliable access for passengers, increase access by public transport and minimise congestion. Airports are expected to upgrade or enhance transport networks and services to cope with additional demand from proposals, but where there are wider transport objectives, the Government will consider the case for central funding.

‘*Beyond the Horizon next steps towards an aviation strategy*’ 2018 (hereafter referred to as ‘*next steps*’) sets out the Government’s approach in developing a new long-term aviation strategy for the UK up to 2050 and beyond. It follows on from the Department for Transport (DfT) 2017 publication ‘*A new aviation strategy for the UK: call for evidence*’. ‘*Next steps*’ says future UK aviation policy will be based on the following objectives:

- *Help the aviation industry work for its customers*
- *Ensure a safe and secure way to travel*
- *Building a global and connected Britain*
- *Encourage competitive markets*
- *Support growth while tackling environmental impacts*
- *Develop innovation, technology and skills*

The DfT (para 6.2) expects demand for air services to continue to increase up to 2050 and that there is a need to increase capacity in the south-east by 2030 with a third (north west) runway at Heathrow Airport being the government’s preferred option. The government however expects (para 6.4) growth to be sustainable and balanced with local and global environmental concerns. At a local level the government recognises that noise is a key environmental concern and it says new policy will consider whether the right regulations and controls are in place to address noise impacts. At a global level the government will consider whether its overarching framework for tackling UK aviation carbon emissions to 2050 and how aviation contributes its ‘fair share’ to action on climate change.

‘*Next steps*’ in delivering the aviation strategy refers to a Green Paper. This was released in late 2018 and it is summarised below.

Beyond the Horizon – the future of UK aviation: making best use of existing runways’ 2018 (hereafter referred to as ‘*making best use of existing runways*’) reiterates (in para 1.2) the need for an additional runway in the South East by 2030, but also noted that there would be a need for other airports to make more intensive use of their existing infrastructure. In paragraph 1.5 the Government says it is: “*minded to be supportive of all airports who wish to make best use of their existing runways, subject to environmental issues being addressed.*” It expects (para 1.8) proposals for increased use of runway capacity to fully

address environmental issues such as noise, air quality and carbon. In paragraphs 1.11- & 1.12 however, the Government expects some environmental issues such as carbon emissions to be dealt with through national policy and it says: *"We shall be using the Aviation Strategy to progress our wider policy towards tackling aviation carbon."*

In December 2018, the Government published its Green Paper: *'Aviation 2050 – The Future of UK Aviation'*. This sets out the Government's draft aviation policy and was subject to a 6-month consultation period which ended in June 2019

The main objectives of the Green Paper for aviation are to:

- help the aviation industry work for its customers
- ensure a safe and secure way to travel
- build a global and connected Britain
- encourage competitive markets
- support growth while tackling environmental impacts
- develop innovation, technology and skills

The Green Paper explores issues rather than setting out definitive views, but it continues to support the best use of existing runway capacity, subject to environmental mitigation. Chapter 3 deals with noise and air quality and Chapter 4 deals with connectivity, including surface access. The Government says concerted global action is needed to deal with aviation's contribution to greenhouse gas emissions. In terms of aircraft noise, the Green Paper sets out new measures to improve noise insulation schemes. The Government is yet to respond to the consultation phase. The Green Paper is therefore a material consideration of low to moderate weight at this time.

Representations on policy and procedure

Some objectors contend that despite Government support for increased use of runways, the application should be refused because it is premature. They say:

- The application has not been informed by an up-to-date airport planning policy document as required by policy CS23 (*'Bristol Airport'*) of the CS.
- The application precedes an updated airport Master Plan which is long overdue (the last version being from 2006), and this is an important policy context against which the proposal should be considered.
- The development is so substantial in scale, and its cumulative effect would be so significant, that to grant permission would undermine the plan-making process by predetermining decisions about the scale, location or phasing of future infrastructure.
- The proposals would have regionally significant consequences in terms of traffic, air quality and noise and it is critical that the consequences of this should be informed by and adopted and up-to-date strategic development plan.

There are two main types of point made here. These are: (1) compliance with an adopted development plan; and, (2) prematurity in relation to an emerging development plan. On the first issue, policy CS23 of the CS only requires the satisfactory resolution of environmental issues for airport growth. While the explanatory text to this policy supports the preparation of an Airport Action Plan to inform the growth of BA, it is not a requirement. The application is not therefore premature in the context of the development plan.

On the second point, the NPPF (paras. 49-50) deals with prematurity in relation to an emerging development plan. It says a refusal on prematurity is unlikely to be justified unless the plan is at an advanced stage and to grant permission would undermine the plan-making process. The withdrawal from the JSP and early stage of preparation for a new North Somerset local plan means that the proposal is not premature when considered against emerging development plans.

The APF recommends airport master plans should be updated every five years, but this is not mandatory. While BAL's Airport Master Plan has not been updated since 2006, BAL regard the 2011 (10 mppa) planning permission as effectively providing a master plan up to 10 mppa. Regardless of this, the fact that BAL's master plan has not been updated in recent years does not make the application premature. BAL say they are preparing a new master plan which is expected to be released later this year.

Some objectors say the scale of growth in this application is beyond the determination of a local authority and it should be considered by the government. Paragraph 1.26 of *'Making best use of'* deals with this matter. It says: *"applications to increase existing planning caps by fewer than 10 million passengers per annum (mppa) can be taken forward through local planning authorities under the Town and Country Planning Act 1990"*. As the proposed growth is 2 mppa, the Council is the appropriate determining authority. Officers have made the government aware of the application and this report.

The *'Town and Country Planning (Consultation) (England) Direction 2009'* requires local planning authorities to consult the Secretary of State before granting planning permission for 'inappropriate' development in the Green Belt which, by reason of its scale or nature or location, would have a significant impact on the openness of the Green Belt. The scale of *'inappropriate'* development in the Green Belt that is included in this application is considered to have a significant impact on the openness of the Green Belt (see Issue 12 *'Green Belt'*). If the Council resolved to approve the application, the resolution would need to be referred to the Secretary of State for his consideration before a decision is issued. Once referred to the SoS, he can either 'call-in' the application and decide it himself or let the Local Planning Authority proceed and make the decision. The Council could however refuse the application without referral to the SoS.

Officers are aware of a letter from the 'Aviation Environment Federation' (AEF) dated 22 October 2019 to the Secretaries of State for Transport and Housing respectively. This requests that a decision on all live planning applications to increase the capacity of UK airports should be suspended until the Government has issued further UK aviation policy (expected in 2020), which clarifies how aviation growth should be considered against the UK's climate change obligations. However, no instruction has been issued from the government to delay decisions on planning applications for airport growth pending new UK aviation policy. The Council should therefore determine this planning application based on current policy which has much more significant weight.

A more in-depth assessment of the planning policies summarised above, and other policies, legislation and guidance is set out in 'Issues 2-23' inclusive.

Issue 2: Need for the proposed development and alternatives

Regulation 18(3) of the *'Town and Country Planning (Environmental Impact Assessment) Regulations 2017'* sets out the minimum requirements for an Environmental Statement (ES). Sub-clause (d) requires: *"a description of the reasonable alternatives studied by the*

developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment". BAL address this requirement in Chapter 3 of their ES: *'Scheme need and alternatives'*. BAL consider three key aspects: the need for the proposed development; alternative options for delivering the proposed development; and the impacts of not proceeding with the proposed development (*'Do nothing'*).

On the first point, some objectors contend that there is no need for BAL to grow above its current permitted capacity of 10 mppa. Some objectors base this point on BAL assuming that there will continue to be unconstrained passenger growth, whereas the Committee of Climate Change (CCC) say that constraining passenger growth is essential to enable the UK government to meet its legal climate change obligations. Other objectors say that even if additional passenger growth needs to be provided for within the South West and South Wales with larger airport capacity, this should be met at other airports, so that there is more equitable and sustainable distribution of airport capacity within the region.

BAL say the need for the proposed development is based on:

- UK Aviation Forecasts (2017) which project a significant increase in demand for flights from people living in the South-West and South Wales;
- Government support for the increased use of existing runway capacity at regional airports;
- BA is best placed to meet this demand.

Need for the Proposed Development

The DfT *'UK Aviation Forecasts'* 2017 (hereafter referred to as the *'Forecasts'*) projects that passenger demand from those living in the south-west will increase from circa 14.3 mppa in 2016 up to 25.1 mppa by 2050: a 10.8 mppa increase over that period. It provides high-level 'constrained' passenger growth projections at all UK airports, including those in the South-West and South Wales which includes Bristol, Cardiff, Exeter, Bournemouth and Newquay airports respectively (Appendix D of the *'Forecasts'*). These growth projections are taken against a 2016 baseline and are projected forward to 2030, 2040 and 2050 respectively using 'low', 'central' and 'high' scenarios. The 'constrained' central case projections are shown in the table below, which extracts figures from Table 62 Annex D of the *'Forecasts'*. All figures are expressed as million passengers per annum (mppa).

MPPA by airport	2016 Baseline	2030	2040	2050
Bristol	7.6	9.5	10	10.2
Bournemouth	0.6	0.2	0.7	4.4
Exeter	0.8	0.7	1	3.1
Cardiff	1.4	0.8	1.1	3
Newquay	0.4	0.5	0.5	0.5

The projections for BA show nominal growth above the current permitted baseline of 10 mppa by 2050. The DfT suggest 10 mppa at BA will be reached after 2030, yet BAL say they are on track to reach 10 mppa in 2021.

Excluding BA, the 'Forecasts' for the other South-West and South Wales airports show a cumulative reduction in passenger numbers from 2016 to 2030. The cumulative growth projections at 2050 (including a 200,000 passenger per annum increase above 10 mppa at BA) is 7.9 mppa by 2050 against the 2016 baseline. The balance remaining from a 10.8 mppa projected growth in the South West and South Wales up to 2050 is 2.9 mppa. This is less than the level of passenger growth in BAL's application.

Cardiff Airport is forecast to decrease from 1.4 mppa in 2016 to 700,000 passengers per annum by 2030 ('central' case scenario). Cardiff Airport however increased passenger numbers to 1.58 mppa in 2018, and they expect to serve 2 million passengers by 2021 and 3 mppa by 2036 (see below for further analysis).

Some objectors say the passenger projections in the 'Forecasts' should be the basis on which planning applications for airport growth are made. The DfT however say that the 'Forecasts' (para 1.4) "*should not be considered a cap on the development of individual airports*" and "*more recent airport specific data and forecasts might be used...to inform local planning decisions*".

BAL say that they expect to serve 10 mppa by 2021 and 12 mppa by 2026. They say that the drivers for these projections include:

- Population and economic growth;
- Growth in the airline activity, traffic and the introduction of new routes;
- Accommodation of leaked demand from other regions;
- Growth in the number of aircraft based at Bristol Airport;
- The introduction of larger aircraft with the possibility for more long-haul routes;
- Increased tourism; and
- Growth in passenger throughput outside of the summer peak.

Officers assisted by independent consultants (Jacobs) estimate that BAL could serve 11.7 mppa by 2026 through a continuation of unconstrained growth (this is stated in para 3.1 of the: '*Bristol Airport Traffic Displacement Estimation*' prepared by Jacobs – January 2020). This does not mean BAL could not continue to grow beyond 11.7 mppa and reach 12 mppa, but it may take longer than is estimated by BAL.

Can a projected growth of 2 mppa by 2026 be delivered at a different airport in the South West and / or South Wales?

Some objectors say that BAL fail to acknowledge the aspirations of other South West and South Wales regional airport operators to develop and expand their infrastructure to serve projected passenger growth in the region. BAL does however examine the options for delivering the proposed development at different airports in paras 3.3.15 to 3.3.22 of their ES. They do this by considering the relationship between BA and what they describe as 'competing' airports, which include: London Heathrow (LHR); London Gatwick (LGW); Birmingham; Cardiff, and Exeter.

They say LHR offers a much wider range of destinations as well as higher frequencies on many short-haul and long-haul routes, which makes it an attractive airport to fly from. Their '*Forecast Validation Report*' however highlights that LHR is operating close to its capacity of 480,000 air traffic movements (ATMs) per year, which means that demands for further growth is more likely to 'spill over' to other UK airports. This point is also acknowledged in the DfT '*Forecasts*'. BAL acknowledge that a third runway at LHR may displace some passenger demand to it from regional airports, such as BA, but a new runway is unlikely to

be operational before 2026. Hence, it is unlikely to be able to meet the more immediate increase in demand for passenger growth from those living in the south-west once BA reaches 10 mppa in 2021. Officers consider this is a reasonable point.

BAL say the capacity of LGW combined with its distance from BA would not present a viable alternative to the planned growth at BA. Furthermore, the Gatwick Airport Draft Master Plan does not envisage a significant increase in capacity being implemented until 2025 at the earliest which does not align with forecast passenger demand for Bristol Airport. Officers do not consider that the distance to LGW from the South West and South Wales is a deterrent to passengers (see table later in this section) but the capacity constraints at LGW are likely to limit the level of passenger displacement.

CAA data shows that Birmingham Airport handled almost 13 million passengers in 2017 making it one of the busiest UK airports outside the London area. The CAA 2017 passenger survey indicated that nearly 4% of the airport's terminating passengers had an origin or destination in the South West. This suggests that it provides much more limited competition for BA than LHR. BAL say this is due to the more limited range of destinations served from the airport relative to LHR and the fact that the drive-time to Birmingham Airport from the Bristol Airport area is comparatively long.

In terms of regional competition, Exeter Airport handled approximately 900,000 passengers in 2017 according to the DfT *'Forecasts'* with passengers traffic being largely outbound leisure. The last CAA passenger survey (2012) reported that the majority of its passengers are from Devon which suggests it is used predominantly by local residents. Due to its size and catchment, BAL consider that Exeter is unlikely to be a significant competitor or viable alternative to meeting passenger demand. Officers have no evidence to reach a different conclusion.

Cardiff Airport is the nearest regional airport to BA, and BAL say it is most likely to provide direct competition. Cardiff Airport's *'2040 Master Plan'* (2019) says that it handled 1.58 million passengers in 2018. This is considerably smaller than the 8.58 million passengers at BA in 2018. BAL project that circa 20% of its passengers originate from the South-Wales / Cardiff catchment area. They say passengers from South Wales choose to use BA due to the wider route network.

Comments made on this application on behalf of the Welsh Government (who own Cardiff Airport) say BAL's application fails to acknowledge the important role that Cardiff Airport plays in serving South Wales and the South West. They say Cardiff Airport has the capacity and aspiration to meet passenger growth in the region and this would reduce what they describe as the present 'imbalance' caused by BAL's scale. They say this causes unsustainable travel patterns and unnecessary transport impacts on the strategic road network (SRN) including the M4 and M5, as well as the local road network in South Wales and the South West. They say this would be worsened in this development is granted and North Somerset is ill equipped to accommodate an exacerbation of the existing level of unsustainable transport movements.

They further contend that a rebalancing of airport related travel in the region, such as proposed growth at Cardiff Airport, would obviate the need for additional development at Bristol airport. They also say that with no expansion of Bristol Airport currently factored into the DfT's aviation sector model, the proposed expansion should be reviewed by Central Government. They add that the value creation ascribed to Bristol Airport's

expansion is not newly created value but will likely be displaced from existing airports, as all other airports within the South West and South Wales have capacity.

Officers note that Cardiff Airport's '2040 Master Plan' (2019) proposes a phased expansion with an ambition of serving 2 million passengers by 2021 and 3 mppa by 2036. This is predicated on new routes and new airlines operating from Cardiff. Passenger growth also relies on improved surface access and transport services with better connectivity into south-Wales communities. This increase represents a growth projection of 420,000 passengers between 2019 and 2021, during which BAL also expect their capacity to increase by just over 1 million passengers. Cardiff Airport's long-term ambition to increase passenger numbers up to 3mmpa by 2030, also overlaps with BAL's projected growth of 2 mppa between 2021 and 2026.

BAL says: (para 3.3.19 of its ES) that: *"whilst the Welsh Government has invested in terminal improvements and route development at Cardiff Airport, it is not anticipated that this growth will provide a significant alternative for absorbing the circa 2 mppa of demand to 2026."* Cardiff Airport's Master Plan, which was issued after BAL applied for 12 mppa, does not refer to how BAL's planning application for 12 mppa application might impact its growth potential. Notwithstanding this, there is nothing in national aviation policy which says that passenger growth (constrained or unconstrained) in regions cannot be met at one or more regional airports.

In terms of the claimed imbalance caused by BA's scale, there are two aspects to this. The first is whether passenger displacement might increase outside the region to other UK airports if further regional airport capacity is not provided. The second is whether the proposed development would increase displacement within the South-West and South Wales Region and whether this is acceptable.

On the first point, BAL contend that if BA is not permitted to increase its capacity above 10 mppa, it will increase the likelihood of passenger displacement from the south-west to other UK airports. This appears to assume that if BAL cannot increase its passenger capacity above 10 mppa in readiness for circa 2 million more passengers per annum within the region by 2026, the other airports within the South West and South Wales will not have sufficient services or capacity in place to meet that level of growth.

Officers cannot verify this, but national aviation policy summarised in Issue 1 clearly supports regional airports who want to maximise the use of their runways. It is also in the interests of sustainable planning that sufficient regional airport capacity is provided to meet the projected passenger growth from those living within the South West and South Wales

The table below, which extracts figures from tables 4.1a and 4.1b of the Civil Aviation Authority (CAA) 'Passenger Survey Report' 2017 shows the level of passengers from the south-west using other UK airports.

Airport	Passengers Numbers from South-West 2017 CAA figures
Heathrow	3,502,000
Gatwick	1,958,000
Stansted	459,000
Birmingham	439,000
Luton	322,000
Manchester	89,000
London City	36,000
East Midlands	26,000
Total	6,831,000

The CAA report does not give the reasons for passenger ‘leakage’, but the DfT ‘Forecasts’ indicate that displacement is influenced by the range and frequency of services, price, convenience and passenger experience at other airports. Nevertheless, the figures suggest that if the demand for air travel from people living in the south-west is not fulfilled at their nearest airport, they will travel longer distances to fly. With the demand for air travel set to increase, a ‘no-development’ scenario at BA is more likely to exacerbate passenger leakage from the south-west than reduce it.

The same factors that cause passenger displacement to airports outside regions is likely to also apply to airports within the same region. There is nothing in aviation or planning policy which suggests there should be a more equitable balance of airport capacity within regions to prevent a so called ‘imbalance’ in the scale or commercial pull of different airports. This is not to say that the proposed development would impact on passenger displacement within the region and this is considered in ‘Issue 3’. Appropriate mitigation, including enhanced sustainable travel, would however be needed to mitigate environmental impacts. This is considered in ‘Issue 8’. Subject to appropriate mitigation however, there is no ‘in-principle’ objection to the proposed passenger growth within the region being met at BA.

Can the proposed development be delivered at a different scale or design?

BAL look at this in terms of the physical restrictions at BA; the range of elements within the application and the options for delivering growth. They say that selecting a smaller scale of growth and infrastructure would however provide for a very short period, after which it is likely that a further planning application for growth up to 12 mppa would be presented. They say this would not be expedient, but 12 mppa is likely to be the optimum capacity they could provide for within the current airport boundary.

They also contend that they have limited the scale of new development in this application, in terms of the enlarged passenger terminal and the volume of additional car parking (relative to increasing public transport services). The extent of off-site highways works is also proportionate to the impacts arising from the expected increase in traffic. BAL say they have maximised the amount of additional development that they can provide in the airport’s Green Belt Inset which reduces the amount of new development in the part of the airport in the Green Belt.

Officers assess the scale and location of development in the subsequent planning issues. There is however no reason to suppose that BAL is proposing more development than is necessary to accommodate a net increase of 2 mppa per and 12 mppa overall.

Technological Influence

BAL's Design and Access Statement sets out the rationale for the proposed development in terms of its technical response to design, sustainability, flood risk and other matters. There is no reason to conclude this has under-utilised technology or that it could result in a different type of proposal.

'Do Nothing' scenario

BAL say that not to increase the capacity of the airport ('Do nothing' scenario) would constrain both operations and investment at the airport. They contend this would not enable the south-west to provide for its expected growth in passengers as set out in the UK Aviation Forecasts in the short and medium term. Furthermore, this increased demand would not go away but simply reallocate (leak) to other regional airports as well as the larger London hubs, with an associated loss of employment and GVA for the local area and the wider South West region.

They say that such leakage would not be in accordance with the Government's support for the growth of regional airports as set out in the APF and the emerging aviation strategy. It would also suppress BA's contribution to the economic development of the South West region: whereas aviation and economic policies regard further growth of BA as a key contributor to the growth south-west economy. BAL rejected a 'do nothing' outcome. Officers have no grounds to reach a different conclusion.

Capacity restraint

BAL contend that if permission for 12 mppa is granted they could provide this development within its present boundaries, save for some additional surface car parking. Some objectors dispute this and say the size of the proposed passenger terminal and the increased car parking capacity that is included in this application, could serve more than the 12 mppa.

Independent advice at the time of the 10 mppa application said that airport capacity is not an exact science and it may be possible to achieve a higher passenger capacity by allowing a lower 'customer experience'. In granting the 10 mppa application, the Council imposed a planning condition that sets an absolute cap of 10 mppa and it requires 6-monthly reporting of passenger figures to track levels of growth. This must be adhered to regardless of whether it is possible to achieve a higher passenger throughput. A planning condition which caps passenger numbers at 12 mppa should be used if this application is approved.

Issue 3: Socio-Economic Impacts

The Aviation Policy Framework (APF) 2013 says: *"new or more frequent international connections attract business activity, boosting the economy of the region and providing new opportunities and better access to new markets for existing businesses"*. This is reflected in the 'Airports National Policy Statement' (ANPS) 2018, which also says (para 2.9): *"The importance of aviation to the UK economy, and in particular the UK's hub status, has only increased following the country's decision to leave the European Union"* and *"it will be essential that increased airport capacity is delivered"*. Paragraph 2.16 adds: *"Without expansion, capacity constraints would impose increasing costs on the rest of the economy over time, lowering economic output by making aviation more expensive and less convenient to use, with knock-on effects in lost trade, tourism and foreign direct investment."*

The NPPF (para 80) says: *“Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development”*. Paragraph 104 highlights: *“the importance of maintaining a national network of general aviation airfields, and their need to adapt and change over time – taking into account their economic value”*.

‘Vision 1’ of the CS says: *“The future planning of...Bristol Airport will be guided by the need to balance the advantages of economic growth with the need to control the impacts on those who live nearby and on the natural environment.”* Priority Objective 3 supports major employers in North Somerset including BA. Policy CS20 focusses on *“Supporting a Successful Economy”*. Its objective is *“to provide at least 10,100 additional employment opportunities 2006–2026”*, and it recognises the value of BA as a major employer.

The ‘West of England Local Enterprise Partnership Strategic Economic Plan 2015-2030’ vision for the West of England (pages 10-11) is that by 2030 it is: *“one of Europe’s fastest growing and most prosperous sub regions”*. An essential component of this is: *“Easier local, national and international travel...that link communities to employment opportunities and local services”*. Page 22 says the plan aims to: *“successfully capture the impact major developments at the airport can have at meeting the investment and jobs targets”*. BAL is described as a *“lever for growth”*.

The ‘North Somerset Economic Plan’ (2017-2036) recognises the important role of BA to the economy and connectivity of North Somerset. It says BA provides an opportunity to support the retention and expansion of the area’s most cutting edge and innovative companies as a driver of productivity growth, as well as to attract inward investment.

In 2018, North Somerset Council published its ‘*Employment Land & Sites Review*’. It forms an evidence base for future North Somerset Local Plans and decisions on planning applications, strategic investment and economic development. It considers an expanded BA would be part of an economic step change in North Somerset and drive the requirement for additional employment land.

The West of England Strategic Economic Plan; North Somerset Economic Plan and North Somerset Employment Land and Sites review are a material consideration of moderate weight.

BAL’s Economic Case

BAL’s ‘*Economic Impact Assessment*’ and ‘*Socio-Economics Assessment*’ project the quantitative and qualitative economic impacts of the proposal against a 2018 baseline. They set out the direct, indirect, induced and catalytic economic operational effects on jobs and Gross Value Added (GVA) and the transitory effects during construction.

‘Direct’ impact is employment and GVA supported by activities wholly or mainly related to the operation of the airport or air services at the airport. ‘Indirect’ impacts are employment and GVA supported in the supply chain. ‘Induced’ impacts include employment and GVA by the expenditure of wages and salaries earned in relation to the direct and indirect activities. Wider, or ‘catalytic’ impacts are the benefits accrued to the region through the provision of connectivity to businesses and to inbound travellers.

Paragraph 4.8 of BAL’s Economic Impact Assessment says: *“The number of direct on-site employees at Bristol Airport in 2018 was 3,950 people...and this equates to around 3,480*

full time equivalents (FTEs)”. For reference, BAL confirm that airlines provide 30% of FTE’s, whereas ‘handling agents’ represented 16% of FTE jobs and ‘terminal staff support services’ also accounted for 16% of FTE’s. Staff involved with ‘terminal concessions’ made-up around 14% of on-site employment. The other 24% of jobs is more dispersed between different roles. BAL say 39% of direct jobs were from people living in North Somerset; with 22% from Bristol, 10% in Bath and North East Somerset and 10% in South Gloucestershire.

The following tables (tables 4.5; 5.1; 5.2 and 5.3 from BAL’s *‘Economic Impact Assessment’*) show their claimed GVA and employment impacts arising from the proposal. These show the direct, indirect & induced employment impacts North Somerset; the West of England and in the South-West and South Wales. The figures for the West of England include those from North Somerset and the figures for South-West and South Wales, includes the West of England (and North Somerset). Table 4.5 shows the existing impacts in 2018, while tables 5.1 and 5.2 show the projected impacts at 2026 at 10 mppa and 12 mppa respectively. Table 5.3 shows the net difference between 10-12mppa at 2026. All tables include ‘productivity’ and ‘tourism impacts’.

Table 4.5: Total Economic Impact of Bristol Airport in 2018 (£2018 prices)

		Direct	Indirect & Induced	Economic Footprint	Productivity	Tourism	Wider Impacts	Grand Total
North Somerset	GVA (£m)	£200	£60	£260	£90	£5	£95	£355
	Jobs	1,300	1,100	2,400	600	75	675	3,075
	FTEs	1,150	875	2,025	450	50	500	2,525
West of England	GVA (£m)	£260	£170	£430	£290	£90	£380	£810
	Jobs	2,900	2,900	5,800	2,250	1,475	3,725	9,525
	FTEs	2,550	2,350	4,900	1,850	1,200	3,050	7,950
South West & South Wales	GVA (£m)	£300	£310	£610	£780	£260	£1,040	£1,650
	Jobs	3,900	6,050	9,950	8,400	5,125	13,525	23,475
	FTEs	3,425	4,775	8,200	6,625	4,050	10,675	18,875

Source: York Aviation

Table 5.1: Economic Impact of Bristol Airport in 2026 – Future Baseline Scenario

(10 mppa)

		Direct	Indirect & Induced	Economic Footprint	Productivity	Tourism	Wider Impacts	Grand Total
North Somerset	GVA (£m)	£240	£70	£310	£110	£5	£115	£425
	Jobs	1,450	1,200	2,650	650	100	750	3,400
	FTEs	1,275	950	2,225	525	75	600	2,825
West of England	GVA (£m)	£310	£200	£510	£360	£100	£460	£970
	Jobs	3,225	3,175	6,400	2,500	1,650	4,150	10,550
	FTEs	2,825	2,575	5,400	2,050	1,325	3,375	8,775
South West & South Wales	GVA (£m)	£360	£370	£730	£950	£320	£1,270	£2,000
	Jobs	4,350	6,600	10,950	9,325	5,700	15,025	29,975
	FTEs	3,825	5,225	9,050	7,375	4,500	11,875	20,925

Source: York Aviation

Table 5.2: The Economic Impact of Bristol Airport in 2026 – 12 mppa Scenario

		Direct	Indirect & Induced	Economic Footprint	Productivity	Tourism	Wider Impacts	Grand Total
North Somerset	GVA (£m)	£290	£90	£380	£130	£5	£135	£515
	Jobs	1,725	1,450	3,175	775	100	875	4,050
	FTEs	1,525	1,150	2,675	625	75	700	3,375
West of England	GVA (£m)	£380	£240	£620	£430	£130	£560	£1,180
	Jobs	3,800	3,800	7,600	3,025	1,975	5,000	12,600
	FTEs	3,350	3,100	6,450	2,450	1,600	4,050	10,500
South West & South Wales	GVA (£m)	£430	£440	£870	£1,140	£380	£1,520	£2,390
	Jobs	5,150	7,925	13,075	11,200	6,850	18,050	31,125
	FTEs	4,525	6,275	10,800	8,850	5,400	14,250	20,050

Source: York Aviation

Table 5.3: The Economic Impact of Bristol Airport in 2026 – Impact of the 12 mppa Planning Consent

		Direct	Indirect & Induced	Economic Footprint	Productivity	Tourism	Wider Impacts	Grand Total
North Somerset	GVA (£m)	£50	£20	£70	£20	£0	£20	£90
	Jobs	275	250	525	125	0	125	650
	FTEs	250	200	450	100	0	100	550
West of England	GVA (£m)	£70	£40	£110	£70	£30	£100	£210
	Jobs	575	625	1,200	525	325	850	2,050
	FTEs	525	525	1,050	400	275	675	1,725
South West & South Wales	GVA (£m)	£70	£70	£140	£190	£60	£250	£390
	Jobs	800	1,325	2,125	1,875	1,150	3,025	5,150
	FTEs	700	1050	1,750	1,475	900	2,375	4,125

Source: York Aviation

BAL contend that the direct impact of BA in 2018 was estimated to contribute £200 million per annum in North Somerset, including 1,300 jobs (or 1,150 FTE's). In North Somerset, a further £60 million GVA and 1,100 jobs are supported indirectly from local employee spending and local business supply chains. A further £95 million is estimated to be supported via wider effects from enhanced productivity as well as tourism. BAL say that the total economic impact of BA is presently estimated at £355 million in GVA and 3,075 jobs (2,525 FTEs) in North Somerset (see Table 4.5). They say this comprises 4% of all employment in North Somerset, which makes it a very significant contributor to the North Somerset economy.

Across the West of England (defined as North Somerset, Bristol, Bath and North East Somerset and South Gloucestershire) BAL claim that the total economic footprint is estimated at £430 million, equating to 5,800 jobs. Accounting for wider impacts, BAL has a GVA of £810 million and supports over 9,500 jobs. This represents 3% of the total economic footprint of the West of England and around 2% of all jobs. Across South West England and South Wales, BAL claim that the total direct, indirect or induced and catalytic employment effects arising from Bristol Airport is estimated at just under 23,500 jobs, equating to £1.65 billion GVA. This makes Bristol Airport a major contributor to the regional economy and a major employer, constituting 1% of total employment and GVA in South West England and Wales.

The results in Table 5.3 show that BAL will continue to grow in terms of jobs and GVA between 2018 (circa 8.6 mppa) until it reaches 10 mppa. Thereafter further growth is contingent on increasing passenger numbers and an enlarged airport infrastructure. Table 5.3 shows that direct full-time equivalent jobs are claimed to increase by approximately 700 (around 250 in North Somerset), while indirect and induced employment increases by

approximately 1,050, giving an overall increase of around 1,750 full-time equivalent jobs. BAL say that wider 'Catalytic' job increases which relates to the South West and South Wales, could be an additional 2,375 FTE's. The direct, indirect and induced GVA growth in North Somerset is stated to be worth an extra £70M per annum with a further £20M per annum when factoring the impacts of productivity and tourism. The gross added GVA in the West of England is contended to be £210M annually and £390M in the wider South West and South Wales areas combined.

BAL say these benefits would be progressive between 10-12 mppa (2021-2026). This would begin during the construction phase and continue as the airport grows between 10 and 12 mppa. BAL say they have accounted for potential negative impacts of outbound travel and the extent to which it removes expenditure from the local economy. They consider the economic boost from increased job opportunities and from opportunities for business growth is positive during construction. Once operational BAL contend the economic impacts would be positive and significant in North Somerset and in the West of England and positive and moderate-significant in the South-West and South Wales.

The Officers' assessment of the claimed benefits is set out under the heading '*Analysis of claimed economic benefits*'.

Third Party Comments (Summary)

Supporters of the application, including West of England Combined Authority (WECA) and Business West, say that the development of BA is crucial for improved business connectivity as well as continued growth of the West's economy and substantial employment growth. Others emphasise the importance that BAL's growth would have in the employment supply chain through increased indirect jobs and investment.

Objectors contend the claimed economic benefits are exaggerated, and the negative impacts are under-estimated or ignored. These include: very modest increases in business travel; in-bound foreign visitors being dwarfed by outbound leisure travel causing a gross loss in revenue to the local economy; and projected job increases being overstated with no recognition of how an economic recession or technological advances impacts on job numbers. Objectors also say the application fails to include an in-depth assessment of the effects of Brexit and other economic risks such as oil prices and carbon taxes; or the adverse economic impacts of increased road congestion.

An objection from 'New Economic Foundation Report' (NEF) submitted by the Campaign to Protect Rural England (CPRE) provides a detailed breakdown of economic objections to the application. Their objection is centred on: climate change impacts; displacement of benefits; tourism impacts; wider economic impacts and total effects.

Analysis of Claimed Economic Benefits

The Council sought independent consultants' advice to assist with the assessment of the claimed economic benefits and objectors' claims. The following assessment takes account of that advice.

UK Aviation Forecasts

Objectors say future passenger demand up to 2050 at UK airports is set out in the DfT '*UK Aviation Forecasts*' 2017. Annex D of those '*Forecasts*' indicates that BA is estimated to reach its current permitted capacity of 10 mppa by 2030 (earliest scenario). Objectors

contend that since the 'Forecasts' do not account for passenger growth above 10 mppa, there will be no economic benefits above 10 mppa.

The 'UK Aviation Forecasts' are not however binding and the DfT acknowledge (para 1.4) that they: *"should not be considered a cap on the development of individual airports"* and *"more recent airport specific data and forecasts might be used...to inform local planning decisions"*. There is no policy which prevents UK airport operators from applying to increase their passenger capacity. Officers also agree that BAL's projected timeline for reaching 10 and 12 mppa is realistic based on a continuation the level of passenger growth at BA in recent years.

Methodology to determine economic benefits

BAL's economic impact assessment is based on model research undertaken by 'Oxford Economics for Transport for London'. This was used for proposed development at London City Airport, and BAL contend it provides an appropriate methodology to project the economic impacts of their proposal. Objectors say this model is flawed and BAL should have used 'S-CGE' (computable general equilibrium) modelling to add robustness to the estimation of economic impacts.

Officers tested this point with the Council's consultants. They confirmed that the approach used by BAL is an appropriate model, whereas 'S-CGE' modelling is often used to evaluate the economic outputs from major transformational projects e.g. Heathrow's third runway proposal. This is not to say that 'S-CGE' would not add further robustness to an economic assessment, but the additional benefits above the model used by BAL are unlikely to be significant. Officers consider BAL's methodology is therefore acceptable.

Notwithstanding this, BAL's projected wider economic impacts appear comparatively high for the scale of the scheme, particularly when compared to other recent economic impact assessments for growth at Heathrow and Gatwick airports respectively. This is because BAL apply a different approach for increased business output and changes in tax revenue. BAL contend that this approach, which excludes the Oxford Economics elasticities on productivity, is consistent with the mode used to estimate economic growth for proposed development at other UK airports including Birmingham, Leeds/Bradford Airport and Newcastle respectively. This point is accepted by officers.

Displacement of Economic Benefits

Displacement refers to the degree to which the effects which produce additional economic activity lead to consequent reductions in activity elsewhere in the economy that would not have occurred if the intervention had not been made. Failing to account for displacement can lead to over-claiming the benefits from proposed development.

Objectors say the way to assess displacement is set out in the government's 'Transport Assessment Guidance' ('WebTAG'). This says: *"When estimating the complete extent of additionality, scheme promoters should consider a large enough geographical area to capture fully the behavioural responses of households and firms at the national level. With respect to supply-side effects...the default assumption is 100% displacement; this applies for all types of economic modelling. The onus is on the scheme promoter to present credible evidence that the particular transport investment will affect a non-transport factor of production. If the scheme promoter is unable to present credible evidence of additionality, the particular economic impacts will be considered displaced from elsewhere."*

Officers note that while 'WebTAG' provides a helpful context for understanding displacement, it is designed to assess public sector investment to ensure value for public money is achieved and interventions address market failure. As this is private sector investment the consideration is judged by officers to be different as this is wholly private investment. Nevertheless, the point made by objectors is that the proposed development is likely to result in the displacement of flights and passengers from other regional airports including: Bournemouth, Cardiff, Exeter and Newquay to Bristol Airport; they say the majority of the claimed economic growth is not therefore a newly created value, despite BAL claiming the opposite. Objectors say BAL's claimed economic benefits to the West of England are overstated by at least 50%, while benefits to the wider South West and South Wales by 70%.

In response, BAL say airports are not homogenous and the four other airports in the South West / Wales offer a substantially different range of services in terms of destination and flight frequency compared to BAL. They suggest these airports will continue to serve their own smaller markets even if BAL expand, but this is unlikely to directly compete with the much broader range of routes at Bristol Airport. A point accepted by officers. Objectors disagree and say that the increased passenger growth from South Wales would be reduced if Cardiff Airport was expanded. BAL say the proposed development will have at most, a minimal impact on passenger displacement within the South-West and South Wales due to the different offers from the two airports. They do however consider that the growth of services at Bristol Airport could reduce the level of longer distance displacement to airports beyond the South West / Wales e.g. Birmingham or Heathrow. Officers, for the reasons set out above in relation to determining benefits, agree with BAL's position.

Passenger displacement is not the same as the displacement of wider economic growth (referred to as 'factor displacement') such as jobs and Gross Value Added (GVA), but it is likely to contribute towards it. BAL assert their investment will ultimately create conditions where resources will reallocate to a different activity and hence the net impact on employment would be zero. In effect, BAL contend that all additional jobs, productivity and other economic growth is entirely new and not already present and / or relocated from other sources. Objectors say BAL's claimed 'zero' factor displacement, is unrealistic. On this point officers agreed that 'zero' displacement is unlikely, although there was likely to be a degree of gain in jobs, productivity and other economic growth.

In order to assist understanding, BAL illustrated for information only, the effect of factor displacement at 25%, 50% and 75% respectively based on Homes and Communities Agency (Homes England) additionality guidance 2014. These are shown in the tables below. BAL apply 25% displacement to North Somerset; 50% to the West of England based on a medium level of factor displacement and 75% to the South West and South Wales. For avoidance of doubt this model applies a cumulative approach, for example, factor displacement of 50% in the West of England includes a 25% factor displacement in North Somerset, while a 75% displacement value in the South West and South Wales includes a 50% factor displacement in the West of England and North Somerset. The NEF objection considers the displacement figures in these tables provides a more realistic assessment of the economic impacts.

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	0% displacement			25% Displacement			Difference		
	North Somerset			North Somerset					
	GVA (£m)	Jobs (#)	FTEs (#)	GVA (£m)	Jobs (#)	FTEs (#)	GVA (£m)	Jobs (#)	FTEs (#)
Direct	50	275	250	40	200	200	(10)	(75)	(50)
Indirect & Induced	20	250	200	20	200	150	0	(50)	(50)
Economic Footprint	70	525	450	50	400	350	(20)	(125)	(100)
Productivity	20	125	100	20	100	75	0	(25)	(25)
Tourism	0	0	0	0	0	0	0	0	0
Wider Impacts	20	125	100	20	100	75	0	(25)	(25)
Grand Total	90	650	550	70	500	425	(20)	(150)	(125)

	0% displacement			50% Displacement			Difference		
	West of England			West of England					
	GVA (£m)	Jobs (#)	FTEs (#)	GVA (£m)	Jobs (#)	FTEs (#)	GVA (£m)	Jobs (#)	FTEs (#)
Direct	70	575	525	40	300	275	(30)	(275)	(250)
Indirect & Induced	40	625	525	20	325	275	(20)	(300)	(250)
Economic Footprint	110	1,200	1,050	60	600	525	(50)	(600)	(525)
Productivity	70	525	400	40	275	200	(30)	(250)	(200)
Tourism	30	325	275	20	175	150	(10)	(150)	(125)
Wider Impacts	100	850	675	50	425	350	(50)	(425)	(325)
Grand Total	210	2,050	1,725	110	1,025	875	(100)	(1,025)	(850)

	0% displacement			75% Displacement			Difference		
	South West & South Wales			South West & South Wales					
	GVA (£m)	Jobs (#)	FTEs (#)	GVA (£m)	Jobs (#)	FTEs (#)	GVA (£m)	Jobs (#)	FTEs (#)
Direct	70	800	700	20	200	175	(50)	(600)	(525)
Indirect & Induced	70	1,325	1,050	20	323	275	(50)	(1,002)	(775)
Economic Footprint	140	2,125	1,750	40	525	450	(100)	(1,600)	(1,300)
Productivity	190	1,875	1,475	50	475	375	(140)	(1,400)	(1,100)
Tourism	60	1,150	900	20	300	225	(40)	(850)	(675)
Wider Impacts	250	3,025	2,375	60	750	600	(190)	(2,275)	(1,775)
Grand Total	390	5,150	4,125	100	1,300	1,025	(290)	(3,850)	(3,100)
Total Study Area	690	7,850	6,400	280	2,825	2,325	(410)	(5,025)	(4,075)

Source: York Aviation – Economic Impact of Bristol Airport; York Aviation – Response to comments

In light of the opposing views between BAL and objectors on passenger and factor displacement, officers sought independent consultants' advice on these matters. Consultants were asked to estimate the magnitude of new trips served by Bristol Airport that are displaced from other airports (moving from other UK airports) as a result of the proposed airport expansion.

The table below shows the projected proportions of passengers from each region in 2026.

Region	Proportion of passengers from each region (UK outbound total)
West of England	35%
Rest of South West	38%
South Wales	17%
Rest of Wales	7%
Rest of UK	3%
Total UK outbound	100%

Source: Jacobs analysis

Consultants assume that forecasted passengers at Bristol Airport from each of the above regions are displaced from other airports in the same regions and this will also result in displaced economic activity. This means that the economic benefit already existed within those regions, but a proportion of this will move to Bristol Airport as a result of the proposed development. The proposed development also has the potential to generate new airport users who otherwise would not have chosen to travel by air.

The table below (prepared by the Council's consultants) summarises the estimated additional economic impact at local, regional and South West and Wales levels. It provides the Council's consultants estimation of the cumulative net additional impacts, in response to those shown in Table 5.3 shown earlier in this section.

Region	Cumulative Gross Economic Impact (£m GVA, York Aviation)	Incremental GVA Impact by Region (£m)	Proportion of Passengers (based on forecast; %)	Net Additional GVA Impact (£m)	Cumulative Additional GVA Impact (incl. displacement; £m)	Implied displacement factor (%)
North Somerset	90	90	0%	90	90	0%
West of England	210	120	36%	77	167	20%
South West & South Wales	390	180	55%	81	248	36%

Source: Jacobs Consultants based on York Aviation data

The Council's consultant's report reached the following conclusions (summarised):

- A continuation of unconstrained passenger growth would see BAL reach approximately 11.7 mppa by 2026
- Forecasted passengers using Bristol Airport from the proposed expansion are likely to be newly generated airport users and some passengers who have come from competing airports, such as Cardiff Airport, Bournemouth Airport, Exeter Airport and Newquay Airport. Some passenger displacement from other regional airports is likely to occur.

The Council's consultants, using York Aviation data, estimate the following net economic impacts arising from the proposed increase in passenger numbers to 12mppa.:

- For North Somerset, the range of growth is between circa £70m and £90m
- For the 'West of England', the range of growth is between circa £110m and £167m
- For South Wales and South West, the range of growth is between circa £100m and £248m

The Council's consultants acknowledge that their estimates are 'conservative' but they are likely to be less than a factor displacement of 25% within North Somerset; 50% in the West of England and 75% for the South West and South Wales, as illustrated in the earlier tables. The range and level of economic benefits arising from the proposed development is still significant.

Objectors say BAL economic case is also undermined because it assumes a total displacement of carbon costs. This assumes that if the additional departing flights and carbon emissions arising from this application did not happen at BA the same level of growth would transfer to another UK airport. Objectors say this assumption is flawed and it further boosts the case in favour of expansion, as it meant that the Assessment did not have to include the social costs of carbon in its cost-benefit ratio.

Officers consider BAL's assumption of total carbon displacement is too simplistic, because it depends on planning permission being granted for 'other' airport growth. This is not to say that the projected growth in carbon emissions arising from this proposal cannot be met in the context of the UK climate change obligations. However, airport growth is contingent on mitigating wider environmental matters; something which will depend on the merits of each application.

The Green Paper '*Aviation 2050*', suggests the UK Government may introduce additional taxation to curtail the growth in aviation emissions in line with global targets, but this is not policy to date. The suggestion from objectors that carbon off-setting would be very costly for aviation and it will be passed on to passengers is speculative. In this context it is view of officers there is no evidence to suggest this undermines BAL's economic assessment.

Inward versus outward spend

Objectors say BAL understate the financial impact of inward versus outward spend from passengers. This is based on BAL's evidence that approximately 84% of passengers are leisure / holiday travellers, with most originating from the UK and undertaking foreign trips. Objectors say that much of the trip expenditure is outside the region or UK, with a projected ratio of 5:1 outward (foreign) versus inward (regional) expenditure. Objectors say

the real benefits of expenditure is not within North Somerset and the region but outside the UK. Others question the methods used to establish the average per trip expenditure used for visitors to the South West.

The APF considers the economic impacts of outbound tourism in para 1.16. It says (referring to consultation responses on the subject) that some: *“respondents considered that there was a ‘tourism deficit’, as more UK residents travelled abroad than overseas residents travelled to the UK. Other respondents highlighted that outbound tourism supports UK-based jobs in the travel and airline industry and boosts high street consumer demand before trips are made.”* It goes on to say: *“that the evidence available to us does not show that a decrease in the number of UK residents flying abroad for their holidays would have an overall benefit for the UK economy.”*

BAL recognise that there are several opportunities to optimise the amount of economic impact including that from inbound tourism. However as this is not a negative impact of the expansion, officers consider the appropriate forum to achieve this is through a strengthened strategic relationship between local authorities, destination management organisations (DMO) and BAL. This group will be tasked with realising as much positive impact from inbound tourism as possible. Officers are comfortable this will take place outside the planning process

Inbound tourism activities will look to capitalise on an estimated 1.5 million journeys by overseas residents in to Bristol Airport in 2020. In addition, many thousands of UK visitors fly into Bristol from the North of England, Scotland and Northern Ireland. NSC and BAL would work together to try and leverage as much benefit from these existing journeys as well as increase the number of inbound visitors.

In this context, development of BA presents opportunities to secure further benefits for the regional visitor economy, and officers anticipate working on campaigns and joint propositions to secure visitor economy investment for North Somerset. This aligns with the objective to grow the visitor economy identified in the Council's Economic Plan. It also supports the emerging Cultural Development Strategy which aims to build on the area's cultural identity in order to raise the regional, national and international profile of North Somerset. To support these objectives, BAL has agreed to work in partnership with North Somerset Council in the following five ways:

- Meeting regularly with North Somerset's newly appointed tourism officer to share information and identify potential opportunities.
- Raising awareness of events and cultural attractions through in-terminal and digital communications to passengers.
- Identifying opportunities where private sector funding can help secure grants from central government, for example through the Discover England Fund.
- Trialling the provision of a staffed tourist information point in the arrivals area of the terminal. and if successful consider role out of tourist information training with all the staff that interact with incoming passengers e.g. Taxi drivers, hospitality and catering offer at BAL etc
- Hosting an annual inbound tourism conference for tourism organisations in North Somerset, as part of this opportunities for mentoring workshops for smaller tourism businesses to grow their productivity, for example social media advice and guidance, recruitment advice for seasonal staff, marketing ideas.
- Continuing to work with partners from across the region to promote the wider offer, with North Somerset as part of this visitor economy narrative.

BAL clarify that the methodology they used to establish average trip expenditure included regional data from 'VisitBritain'. The Council's consultants consider the level of claimed benefits are accurate, officers accept their assessment. These are outlined in table 5.3 of BAL's original submission (the 2mppa expansion will result in 900 new FTEs and £60m additional GVA).

Foreign Direct Investment (FDI)

Objectors say that the application does not optimise the scope for FDI arising from the proposal, and this undermines the credibility of the claimed economic benefits.

FDI is the opportunity to increase inward trade or investment from an enlarged airport, with direct and indirect benefits to the West of England, South West and South Wales economy as a result. Officers would have preferred more information from BAL to demonstrate the positive economic impact, by undertaking primary research with businesses in the region that have FDI links and expansion potential outside of the region. Officers accept however that it is challenging to link individual airport development projects to particular successes in relation to FDI or indeed general growth in FDI economic growth. The lack of a firm quantitative FDI figure does not however undermine BAL's economic case. The secondary evidence provided demonstrates the importance of international connectivity on FDI decisions and the role Bristol Airport can play. Regardless of this planning application, the Council and other organisations are engaged in developing FDI support packages with BAL's direct involvement.

Social and Regeneration Impacts

The displacement conclusions reached by the Council's consultants demonstrate a clear positive economic impact from the Airport's proposed expansion. Officers are concerned that new development and associated employment growth such as that proposed in BAL's expansion plans, will exacerbate existing skill shortages and create additional pressures on the local labour market. BAL's economic impact assessment also acknowledges that 'the 'pull' from the airport may make it harder for other local businesses to recruit or potentially drive up wage rates'.

BAL's economic impact assessment does not contain detailed work to ascertain whether the requisite skill sets in some parts of Weston-super-Mare and South Bristol (areas of relative deprivation.) will be sufficient to fill the newly created roles associated with the airport expansion in both the operational and construction phases on the project. As such there is some uncertainty around whether the skills of the available workforce in these areas will match the requirements of the new jobs.

In the operational phase BAL identifies many direct jobs are likely to require either basic skills or supervisory skills along with a smaller number of managerial jobs at a higher level. Demographic evidence shows that skills levels in the available employment base (i.e. those currently unemployed) do not necessarily match these skills requirements. The regional areas of high unemployment correlate with a high proportion of people with basic or no skills. This suggests that despite a significant number of jobs being available in the operation of an expanded airport there is a lack of people with the prerequisite skills who can take up some of these roles. BAL may be able to source new employees from existing businesses in North Somerset and the West of England; however, this would lead to pressures in the labour market for other employers as they need to back fill vacancies.

As well as a lack of basic skills there is also evidence of a shortage of skills in specific sectors related to end use jobs associated with airport expansion. Officers are aware here are regional shortages of skills, particularly in science, technology, engineering and maths (STEM). This includes a mismatch of skills both in the immediate term, where training completions are not meeting the needs of recruiting firms, but also the longer-term pipeline of skills to enable increasing productivity and growth.

In relation to construction as well as a lack of basic and digital skills there is also evidence of a shortage of skills in specific sectors related to construction. This will affect residents' ability to access new employment opportunities being created. Key evidence relating to construction skills shortages in the West of England includes:

- A decline in training achievements in several main occupations
- Existing demand based on pipeline projects in 28 construction occupations (from process managers to surveyors)
- Existing large-scale national infrastructure projects, such as Hinkley Point C, place high demands on the construction workforce.

If these impacts are not addressed, it will lead to a greater proportion of the labour supply being sourced from outside of the region which contributes to unsustainable commuting, added pressure on housing and demand for other services which can be more difficult for public sector to anticipate and meet. In addition, there is the need to expand the local labour market in line with growth of employment from new development, to avoid detrimental impacts on other local employers from increased competition for those employees with suitable skills and qualifications.

In the context of mitigating construction and operational phase skills concerns arising from this proposal officers therefore recommend planning obligations within a S106 legal agreement should include:

1. An Operational phase 'Employment Support Fund' - a cash contribution of £300,000 to commission a specialist employment support provider to deliver a suite of employment and skills interventions which would support residents to access end use/ operational phase jobs.
2. An Education Programme: BAL should work to develop a pipeline of talent to safeguard growth by engaging with education, from primary level through to university. Engagement with schools and FE/HE at all levels will support the raising aspirations agenda and maximise the opportunity for young people and adults to access employment at the site. Building on the relevant part of the agreed Skills and Employment Plan will include:
 - Career insights visits
 - Work experience
 - Mentoring
 - Classroom activity
3. A local labour agreement and action plan, bound by the principles of the 'Construction Training Industry Board (CITB) Client Based Approach', relating to the construction phase of BAL 12mppa expansion. This will require BAL to:

- Submit a Construction Skills and Employment Plan (SEP) building on the Heads of Terms set out in Appendix A to this agreement and action plan to NSC for its written approval at least 6 months (or at the earliest opportunity in this case) before the commencement of the development on site, such approval to include the date by which the SEP and action plan are to be implemented by BAL;
- Comply with and implement the approved SEP and action plan and provide NSC (in partnership with Alliance Homes) with information as required to demonstrate its compliance with the SEP and action plan;
- Provide a monthly highlight report of the various employment and skills activities delivered in the previous month.

BAL have agreed in principle to these requirements.

Conclusion

The above assessment work has looked in detail both at BAL's case and the counter argument that airport expansion is overstated. Whilst there is not consensus over the exact scale of economic benefit, it is clear that the proposals will have a substantial net economic impact for North Somerset and the wider sub-region. Even using the Council's consultants more conservative estimate, this amounts to approximately £70m for North Somerset, £110m for the WoE and £100m for South Wales and the South West as a result of the proposed expansion. If the airport's forecasts are born out then the benefits are even greater.

In addition, the expansion builds on the airport's role as a major employer in North Somerset and provides opportunities for job creation and skills development. To secure this, the proposed S106 agreement would include provisions that support specialist employment support, scholastic and educational outreach and specific construction phase labour agreements. The rationale being to ensure a systematic long-term approach developing resilience and inclusivity within their talent pool and supply chain.

Issue 4: Greenhouse Gas Emissions / Climate Change

The International Civil Aviation Organisation (ICAO) is responsible for addressing the UN's '*Framework Convention on Climate Change*' for aviation. Under ICAO guidelines, member states including the UK Government agreed in 2016 to introduce a global '*Carbon Offsetting and Reduction Scheme for International Aviation*' (CORSIA). It will be implemented in phases beginning in 2021. All international flights will be subject to carbon offsetting from 2027. CORSIA allows aircraft operators from member states to purchase 'emission units' to offset any growth in carbon emissions from international flights above levels from 2020. CORSIA has an end date of 2035.

The EU '*Emissions Trading Scheme*' (ETS) also applies. It sets carbon reduction targets and it allows emissions from one sector to be off set against those from other sectors. Emissions from international flights (controlled under CORSIA) are excluded from the ETS, but it includes emissions from domestic flights. If the UK leaves the EU with a deal, the Government has laid out plans for a transition period during which the UK would remain in the ETS, before it is replaced with a UK ETS. If the UK leaves without a deal, the Government would introduce a carbon tax system.

UK legislation, through the '*Climate Change Act*' 2008 (CCA), sets the UK's approach to tackling climate change. It requires GHG emissions to be reduced and that climate change risks are prepared for. The CCA initially established a legally binding UK target to

reduce carbon emissions by at least 80% in 2050 from 1990 levels, and it set five initial carbon reduction budgets as below.

Budget	Carbon budget level	Cumulative reduction below 1990 levels
1st carbon budget (2008 to 2012)	3,018 MtCO ₂ e*	25%
2nd carbon budget (2013 to 2017)	2,782 MtCO ₂ e	31%
3rd carbon budget (2018 to 2022)	2,544 MtCO ₂ e	37% by 2020
4th carbon budget (2023 to 2027)	1,950 MtCO ₂ e	51% by 2025
5th carbon budget (2028 to 2032)	1,725 MtCO ₂ e	57% by 2030

*MtCO₂e means Million Tonnes of Carbon Dioxide equivalents. 'Carbon dioxide equivalent' (CO₂e) is a metric measure of GHG emissions Domestic aviation emissions are included in the UK carbon budgets, but emissions from international aviation are currently excluded.

The Committee on Climate Change (CCC) established under the CCA 2008, says the first (2008-12) and the second (2013-17) UK carbon budgets were achieved. The Department for Business, Energy and Industrial Strategy (BEIS) *'Updated energy and emissions projections'* May 2019, indicates that the third carbon budget (2018 to 2022) is also likely to be achieved, but UK's emissions are projected to exceed the fourth budget (2023-2027).

The UK Government passed the *'Climate Change Act 2008 (2050 Target Amendment) Order 2019'* in June 2019. This revised the previous 80% reduction target to at least a 100% reduction of GHG emissions (compared to the 1990 levels) in the UK by 2050. This is known as 'net zero' target.

The requirement to assess the impacts of proposed development on climate change is set out in the: *'Environmental Impact Assessment (EIA) Directive' 2017* and in *'The Town and Country Planning (Environmental Impact Assessment) Regulations 2017'*. The Institute of Environmental Managers and Assessors (IEMA) also provide guidance on: *'Assessing Greenhouse Gas Emissions and Evaluating their Significance'* 2017. Section 6 says: "GHG emissions from all projects will contribute to climate change" and any GHG emissions or reductions from a project might be significant. The *'European Monitoring and Evaluation Programme'* (EMEP) / European Environment Agency (EEA) Guidebook 2016 advises how to calculate aviation emissions and the Government *'Greenhouse gas reporting: conversion factors'* (2019) describe the scope and reporting of GHG emissions.

The DfT *'UK Aviation Forecasts'* 2017 says (para 3.8) carbon dioxide (CO₂): "makes up about 99% of the greenhouse gas emissions from UK aviation, with the other 1% coming from Nitrous Oxide (N₂O)." It says CO₂ UK aviation emissions includes those from departing flights to other UK airports and international flights. CO₂ emissions from international flights arriving in the UK and international flights passing through UK airspace are not however included as this would amount to double counting. Emission from surface access, construction, ground based airport operations and emissions from airport buildings are subject to separate (non-aviation) carbon budgets.

Policy and Guidance

'Beyond the Horizon: making best use of existing runways' 2018, says (para 1.3) that the Government has: "set out its preferred option for a new Northwest runway at Heathrow by

2030 through...the Airports National Policy Statement (NPS), but has not yet responded on the recommendation for other airports to make more intensive utilisation of their existing infrastructure". Paragraph 1.9 says the Government devolves decision making on most environmental issues, including noise and air quality to the local planning authority, but paragraph 1.11 recognises that some important elements including carbon emissions "should be considered at a national level".

In paragraph 1.12 the Government says: *"We shall be using the Aviation Strategy to progress our wider policy towards tackling aviation carbon. However, to ensure that our policy is compatible with the UK's climate change commitments we have used the DfT aviation model (referring to the 'UK Aviation Forecasts' 2017) to look at the impact of allowing all airports to make best use of their existing runway capacity."* Paragraph 1.14 to 1.16 considers 'carbon trading' and 'carbon capping' to manage CO₂ emissions from aviation. *'Making best use of'* is a material consideration of significant weight.

The Committee on Climate Change (CCC) *'Progress Report'* (July 2019) says (page 65) Net-Zero should be targeted across the whole economy without recourse to off-setting, but some *'hard to reduce'* sectors, including aviation, will need to be balanced with carbon removals. Their letter to the Secretary of State for Transport in September 2019, says: *"zero-carbon aviation is highly unlikely to be feasible by 2050"*.

The CCC recommended a carbon budget for UK aviation of 37.5 Million Tonnes of CO₂/annum (37.5 MtCO₂/yr), which factors in 'headroom' for carbon emissions from international aviation. The Government, at the time of the Green Paper *'Aviation 2050'*, (para 3.87) said its intention is to adopt a UK aviation budget of 37.5MtCO₂yr and leave 'headroom' for international aviation when setting carbon budgets. This has not been translated in to policy to date. It also says (para 3.82): *"international action is the first priority for tackling international aviation emissions"*.

The CCC says aviation emissions in their *'core scenario'* align with its recommendation to keep 2050 emissions at or below 2005 levels of 37.5 MtCO₂/yr. They say this: *"can be achieved with some fuel efficiency improvement and by limiting [passenger] demand growth to 60% above 2005 levels"*. The CCC reports are not policy and to that extent they are given moderate weight.

'Vision 1' of the Council's Core Strategy (CS) says development should: *"respond to the challenge of climate change and move to more sustainable energy use"*. Policy CS1 of the CS (Addressing climate change and carbon reduction) says the Council is: *"committed to reducing carbon emissions and tackling climate change, mitigating further impacts and supporting adaptation to its effects"*. Policy CS2 (*'Delivering sustainable design and construction'*) requires new buildings to include renewable technologies to self-generate 15% of the ongoing energy requirement for that building. These policies are given significant weight.

Para 8 of the NPPF refers to the importance of protecting and enhancing our natural environment and planning decisions should mitigate and adapt to climate change. Paragraph 148 supports the transition to a low carbon future and to contribute to reduced GHG emissions. Paragraph 150 says new development should avoid being at increased risk to the impacts climate change and it should be designed to reduce energy consumption through construction, ground operations and decentralised energy. These paragraphs are given significant weight.

Assessment

Chapter 17 of BAL's Environmental Statement examines '*Carbon and Other Greenhouse Gas Emissions*'. BAL identify different sources of GHG's emissions arising from the proposed development. They quantify the predicted volume of GHG from each source and consider its significance against UK carbon budgets. They also consider the vulnerability of the proposed development to the predicted effects of climate change.

Some objectors argue that there has been a failure to take into account so-called 'tankering' of fuel. Tankering refers to situations when airlines purposely increase their fuel intake to avoid buying higher-cost fuel at the destination airport. Objectors say that this increases the weight of the aircraft and additional carbon emissions arising from this that would not otherwise have taken place. Objectors say the data provided in support of the planning application excludes the impact of tankering and it cannot be relied on.

BAL's methodology for assessing carbon emissions and other GHG emissions (set out in paras 17.9.26 and 17.9.40 of the ES) however, is based on established industry standard guidance and models. Projected carbon emission levels are therefore based on operational parameters and data, including surveys of fuels use. This implicitly considers tankering based on the assumption that tankering at Bristol Airport is similar to Europe-wide operations of similar aircraft types on similar routes that have been modelled and this applies to both the carbon baseline and 10 and 12 mppa forecasts. The carbon projections presented in the application and arising from the proposed development are therefore considered reasonable.

GHG emissions arise from:

- Construction
- Non-aviation operations. This comprises:

'Scope 1' (direct emissions) which are emissions that are controlled by the applicant. This includes gas use, fleet vehicles, heating/red diesel, fire training, company cars, refrigerants and emissions from other ground-based activities. 'Scope 2'. These are emissions from grid electricity, heat, steam and cooling systems. Emissions from surface access (employees, passengers and goods): and airport servicing vehicles,

- Aviation emissions from the entire flight.

Emissions from construction are shown in 'Table 17.8' of the ES (below). This includes emissions from:

- HGVs movements for the conveyance of materials that originate, as a worst-case scenario, up to 150km from the airport; and,
- Construction employee traffic that are based on direct jobs created in the North Somerset, West of England and South West & South Wales Region.

Source	Activity	Kilo Tonnes of CO ₂ e (total forecast – not per annum)
Construction	Construction Vehicles (HGV's)	4.29
	Construction Employee vehicles (LDV's)	0.62
	Embodied carbon of materials	41.32
	On-site construction processes	1.86
Total		48.09

BAL acknowledge that this figure was calculated before the ‘Greenhouse gas reporting: conversion factors’ (2019) came in to effect. As a result, GHG emissions from HGV construction movements are now estimated to be marginally lower using the 2019 conversion factors than they were in 2017, although the difference this has on estimated CO_{2e} emissions from construction is immaterial. Officers’ assisted by independent consultants, consider the predicted 48.09 kilo tonnes of CO_{2e} from construction is a realistic worse-case increase and that it has an insignificant impact when measured against the UK carbon budgets during the third and fourth budget periods (the projected timeframe for construction of works in this application).

BAL projected GHG emissions from all other sources are set out in the table below. KtCO_{2e}/yr refers to Kilo Tonnes of Carbon Dioxide equivalent per year.

Source	Activity	Baseline 2017 KtCO _{2e} /yr	Future baseline at 10 mppa KtCO _{2e} /yr	Proposed development at 12 mppa KtCO _{2e} /yr	Increase between 10-12 mppa KtCO _{2e} /yr
Non-aviation operations	Scope 1	1.79	2.21	2.65	+0.44
	Scope 2	4.63	5.85	7.26	+1.41
	Surface Access	191.89	222.08	267.94	+45.86
Sub-Total (non- aviation operations)		198.31	230.14	277.85	+47.71
Aviation operations	Cruise Domestic	44.25	42.80	46.53	+3.73
	Cruise International	586.36	988.9	1075.01	+86.11
	Landing & take-off domestic	18.83	16.39	17.53	+1.14
	Landing & take-off international	97.33	135.79	151.38	+15.60
Sub-Total (aviation operations)		746.77	1183.87	1290.46	+106.57
Total		945.08	1414.01	1568.31	+154.29

A more detailed breakdown is in Appendix 17 of the ES.

BAL say ‘Scope 1’ operations will produce a ‘worse-case’ net increase of 0.44Kt CO_{2e}/yr. Officers agree with the methodology used by BAL to calculate ‘Scope 1’ GHG emissions and consider the projected figure is realistic. Officers consider that this is not significant against the ‘Non-residential UK buildings’ sector budget of 22MtCO_{2e}, set out in Table 3.2 of ‘Meeting Carbon Budgets: Closing the policy gap - 2017 Report to Parliament

Committee on Climate Change June 2017', because it equates to 0.002% of that carbon budget.

'Scope 2' emissions are projected to be 1.41 ktCO₂e/yr. Officers consider that the methodology used by BAL to establish this is acceptable, and the projected figure is realistic. This equates to 0.003% of the *'indirect emissions from UK buildings'* of 52 MtCO₂e/yr, set out in *'Meeting Carbon Budgets: Closing the policy gap - Report to Parliament Committee on Climate Change June 2017'*). Officers consider this is not significant.

BAL say the worse-case increase in surface access emissions is 47.86 KtCO₂e/yr at 12mppa. They consider this is *'relatively minor'* in the context of: (1) UK road transport emissions of 114.2 MtCO₂e in 2016 (equivalent to 0.04% of those calculated emissions), and (2) the West of England transport emissions of 1.4 Mt CO₂e (equivalent to 3.2% of those emissions): as shown in the BEIS: *'UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2016'*. This was updated in June 2019 with 2017 figures, although the difference is immaterial. Officers consider the methodology used to determine this figure is acceptable and this level of additional GHG emissions is not significant against the carbon budget for that sector. This includes 'embedded' mitigation to achieve these levels, which comprises proposals to: (i) increase the percentage of passengers and staff travelling to and from BA by public transport and (ii) a reduction in single occupancy car journeys by staff. Embedded mitigation is considered in more detail in planning *'Issue 8: Surface Access Strategy'*.

The largest increase in GHG emissions arising from the proposed development is from aircraft movements (106.59 ktCO₂yr), although this increases by 0.1% to 106.63KtCO₂yr using the latest International Civil Aviation Organisation 'databank version v26A' 2019. This includes emissions from domestic and international departing aircraft. It also includes BAL's estimated aircraft fleet mix operating at BA between 10 and 12mppa, which is considered separately in *'Issue 5: Noise Impacts'*. This equates to a 0.1Mt/Co₂eyr or 0.28% of the CCC's recommendation that UK aviation should not exceed 37.5MtCO₂yr. BAL say this is not significant for the UK meeting its climate change obligations.

Some objectors disagree with this and they refer to the *'UK Aviation Forecasts'* (2017) which, in Annex D and E, provide a UK airport-by-airport breakdown of the projected passenger, Air Traffic Movements and CO₂ growth from a 2016 baseline and up to 2050. For BA it projects that its CO₂ aviation footprint will reach 0.5 MtCO₂e/yr (*'central case'*) by 2030, which then stays between 0.4-0.5 MtCO₂e/yr up to 2050. This assumes BAL will reach its permitted capacity of 10 mppa around 2030 (earliest scenario), which is maintained up to 2050 (Annex D *'constrained passenger growth'*).

Objectors say that BAL maintaining 0.5 MtCO₂e/yr is essential to the UK not exceeding the CCC's recommended UK aviation carbon budget of 37.5MtCO₂yr at 2050. However, the proposed development would increase BA's aviation carbon footprint to 0.6MtCO₂yr by the time 12 mppa by 2026. Objectors consider any carbon growth at UK airports that is not accounted for in the *'UK Aviation Forecasts'* would compromise the UK's ability to meet its climate change obligations and it should not be granted. Para 1.4 of *'UK Aviation Forecasts'* however says it: "should not be considered a cap on the development of individual airports" and "more recent airport specific data and forecasts might be used...to inform local planning decisions".

Paragraph 1.13 of *'Making Best Use of existing runways'* says the *'UK Aviation Forecasts'* is the basis on which UK passenger, air traffic movements and CO₂ from flights departing UK airports up to 2050, are projected. These account for all proposed UK airport growth up to 2050. Para 1.13 (table 3) shows the projected amount of CO₂ emissions from flights departing UK airports at 2050 including a third runway at Heathrow Airport (North-West Runway). The highest projection is an estimated 43.4 million tonnes of carbon per annum at 2030. This level of CO₂ emissions and some other lower projections exceeds the CCC's recommendation to limit aviation emissions to 37.5MtCO₂eyr.

The CCC, in their letter to the Secretary of State for Transport (dated 24th September 2019) however indicates that once planned capacity increases at London airports are achieved there will be limited remaining growth capacity up to 37.5 MtCO₂ per annum. This implies that a third runway at Heathrow is compatible with its recommended annual CO₂ recommended target, while leaving headroom for further growth. They also say that UK aviation emissions reached 36.5MtCO₂ in 2017 and *"Our scenarios from our net-zero advice suggest aviation emissions could be reduced from 36.5 MtCO₂ in 2017 to around 30 MtCO₂ in 2050."* They describe this as *'further ambition'* which they say would be achieved through fuel efficiency gains, sustainable fuels and taxation to constrain passengers demand. It suggests that annual CO₂ emissions from aviation is a dynamic process that is affected by technological advances.

BAL's proposal would add 0.106 MtCO₂e/yr from aviation. Adding this increase to 36.5MtCO₂ from UK aviation reached in 2017 (there is no further update on this figure to date), the 12 mppa proposal would remain within the recommended 37.5MtCO₂e/yr aviation budget. This level of growth does not therefore appear to be so significant that it would adversely impact on the ability of Government to meet its overall UK carbon reduction targets, including the CCC's recommended carbon budget. Given this, and the absence of policy which restricts UK operators from increasing passenger capacity or a cumulative UK CO₂ aviation cap, it is not considered that there is a policy basis to refuse this application in terms of the added aviation emissions arising from the proposed development.

Carbon Management Plan

BAL's planning application draft *'Carbon and Climate Change Action Plan for growth to 12 mppa'* (CCCAP) lists actions to enable BAL to achieve carbon neutral growth from 2025. It has also produced an information booklet: *'Becoming a net zero airport': Our roadmap to reduce carbon emissions'*, which outlines the same objective, although that document is not part of the planning application.

The CCCAP applies to Scope 1 and 2 activities (in its control) and some 'Scope 3' activities (not in its direct control, but with an ability to influence) to reduce GHG emissions. It identifies targets, timeframes, actions, governance and monitoring arrangements to do this. BAL say carbon neutral growth will be achieved through reduced energy consumption and energy efficiency in the design and operation of its buildings; metering of mains supply, low carbon energy supply; and off-setting of residual emissions by carbon emissions credits. They propose to:

- Examine opportunities to accelerate adoption of newer, more fuel-efficient lower carbon aircraft, for example, through review of BAL's landing charges.
- Invest in Fixed Electrical Ground Power (FEGP) to avoid the use of mobile diesel generators on stands, subject to feasibility

- Implement operational procedures to encourage single engine taxiing and reduced use of auxiliary power units (APUs);
- Invest in electrical charging points across the airport

Managing and reducing GHG emissions from surface travel to / from BA is included in BAL's 'Airport Surface Access Strategy' and its draft 'Workplace Travel Plan'. BAL propose to make public transport contributions and service enhancements to reduce the number of passengers and staff travelling by private vehicle as a first principle (this is considered in *Issue 8: Surface Access Strategy*).

The CCCAP proposes a five-year programme of actions covering the period 2021-2025. An annual performance report would be issued to the Council which would set out whether actions specified within the CCCAP are effective, on track or behind schedule. For actions that are behind the GHG reduction trajectory, the report would propose remedial actions to remedy this.

The draft CCCAP is welcomed by officers and its scope is broadly supported. The growth of electric vehicle charging is a positive proposal, but this should be optimised and a transition towards ultra-low emission vehicles from BAL's own fleet should also be set out together with clear timescales. Contractual arrangements with on-site taxi services should also commit to greater use of energy efficient vehicles, and the right level of supporting infrastructure will be needed to achieve this. BAL also has a substantial on-site car hire operation at the airport, which should also be brought in to the scheme. A feasibility programme to replace mobile diesel generators with fixed electrical ground supply is welcomed but intermediate measures, such as a portable electric supply while longer term replacement is planned for, should also be included.

Other means to reduce grid energy supply through metering and greater use of micro-renewable technologies and high standards of design are proposed, as are measures to reduce aircraft engine use including on-board auxiliary power while the aircraft is grounded. BAL say that they will seek to influence other activities, not directly in their control, such as the move towards cleaner aviation fuels and technological advances in aircraft design. These are also welcomed, but they are contingent on wider technological advances beyond their direct control. Revised landing charges to induce greater use of quieter and more fuel-efficient aircraft is supported by officers, as is reduced use of aircraft engines while planes are on the ground. Details of how and when this will be achieved will however need to be set out in the final version of the CCCAP.

The principle of the CCCAP is supported, but its requirements will need to be developed and this can be secured through a planning condition.

Vulnerability of the proposal to climate change

The vulnerability of the proposal to the effects of climate change is assessed in Chapters 2 (Description of proposed development); 14 (Biodiversity); 15 (Flood Risk and Drainage); 17 (Carbon and Other Greenhouse Gas Emissions); 18 (Appearance and Design) and 20 (Major Accidents and Disasters) of the ES and in the Design and Access Statement.

The airport is in a '*low probability flood zone*' and flood risk is unlikely to directly affect the operation of the airport in the foreseeable future including the predicted impacts of climate change. Building design in terms of its resilience to weather and security and the inclusion of micro-renewable technologies to self-generate some of its ongoing energy supply, is

also addressed in the applicant's Design and Access Statement and does not give rise to unacceptable issues. Biodiversity is examined in Issue 13, and this would not undermine the proposal in terms its resilience to the predicted impacts of climate change.

Overall, it is considered that the vulnerability of the proposal to the effects of climate change has been addressed and there are no objections to this.

Climate Change Emergency

The Council approved a motion in February 2019 declaring a climate change emergency and that it would report on the actions and funding that is necessary for North Somerset to become carbon neutral by 2030. A working group was set up to develop a Climate Emergency Strategy and Action Plan (CESAP) which would aim to bridge the gap between North Somerset 'as is' and North Somerset 'to be'.

It is intended that the Action Plan will be a live document that will be regularly updated as more information and data about specific initiatives, projects and policies is understood. It considers how projects and initiatives can help achieve carbon neutrality by 2030 in relation to the key principles and method identified in the Strategy document. It considers the benefits and deliverability of the identified initiatives, timeframes and financial implications. The Action Plan also considers the role of the council itself in delivering initiatives alongside regional and national working.

The CESAP will address 'Scope 1, 2 and 3' carbon emissions sources. Scope One emissions are those that are derived directly from the activities of a person or an organisation under its control. Scope Two refers to indirect emissions from the production of electricity that is purchased and used, so the more electricity used in North Somerset that is generated from renewable sources the better. Scope Three refers to all other *indirect* emissions of the activities that an organisation or person does not own or control. For the council this would include emissions generated by its staff commuting to work. Scope Three emissions are the most challenging to reduce and will require significant behavioural change of everyone who lives in, works in and travels through North Somerset.

Some objectors say that it would be inconsistent for the Council to promote a carbon neutral North Somerset, if it then approved this application which clearly increases GHG emissions. BEIS compiles annual statistics for Greenhouse Gas emissions, which local authorities can use to establish baselines against which future GHG reduction targets can be measured. This includes a 'dataset' which sets out carbon dioxide emissions within the scope of influence of Local Authorities. This dataset recognises that local authorities have very little influence over emissions from motorways, international aviation and shipping and these are excluded from local emission calculations.

Summary

GHG emissions arising from the proposal, including those arising from flights and other sources are unlikely to have a material impact on the ability of the Government to meet its climate change obligations. The applicant's emerging CCCAP also demonstrates that it is committed to agreeing practical measures to reduce carbon emissions through day-to-day operations in its direct control and other 'scope 3' sources.

There are no objections to the applications in terms of its impact on climate change, which are considered to be acceptable in terms of: *'Beyond the Horizon: making best use of*

existing runways 2018; Policy CS1 and CS2 of the of the North Somerset Core Strategy and paragraphs 8, 148 and 150 of the NPPF.

Issue 5: Noise Impacts

The management of airspace and aircraft noise is distributed between different organisations. The International Civil Aviation Organisation (ICAO) control noise limits that all new aircraft must comply with, while the Civil Aviation Authority (CAA) manage the safety and efficiency of UK airspace. Airport operators are responsible for defining arrival and departure routes below 7000 ft, whereas UK airspace above 7,000ft is managed by the National Air Traffic Services (NATS). Proposals to change approved arrival / departure routes or wider airspace change is dealt with under an 'Airspace Change Process' which is regulated by the Department for Transport (DfT) and the CAA under '*Civil Air Publication 1616*'. A separate consultation is currently taking place on this outside of the planning process.

UK airport operators are required to produce a Noise Action Plan (NAP) to show how they intend to manage noise from airport operations. This is regulated under EU Directive 2002/49. BA's NAP for 2019-2024 was adopted by the Department for Environment, Food and Rural Affairs (DEFRA) in 2019. It considers noise issues and effects from aircraft taking off, landing and whilst on the ground, and it includes actions to manage these effects. BAL's noise monitoring results are published in an 'Annual Operations Monitoring Report'.

The assessment of noise from aircraft and other sources resulting from planning applications lies with the local planning authority, save at Heathrow, Gatwick and Stansted airports, which are controlled by the DfT. The Civil Aviation Act 1982 exempts aviation noise from action under statutory noise nuisance.

Regulation 598-2014 deals with '*the introduction of noise-related operating restrictions at Union airports within a Balanced Approach*'. This regulation applies at major UK airports generating 50,000 or more flights per annum, which includes Bristol Airport. This application proposes three operational changes as below, which have a clear potential to have noise impacts:

- Increasing the current annual passenger restriction from 10 to 12 mppa
- Retaining the annual 4,000-flight restriction between 23:30 and 06:00 Hours, but removing the seasonal restrictions of a maximum of 3,000 flights in the BST and 1,000 in the BWT
- Changing the operating restrictions at aircraft stands 38 and 39

Other parts of the application that have a clear potential affect noise level are those associated with traffic growth, highway works, alterations to taxi-ways, car parks and the construction of these elements.

The 'balanced approach' set out in the Regulation requires consideration of:

1. the reduction of noise at source (such as the use of quieter aircraft).
2. land-use planning and management
3. noise abatement operational procedures (flight paths).
4. operating restrictions (which might include caps on night-time flights).

Guidance on the *'introduction of noise-related operating restrictions at major airports'* October 2019 also apply.

Other noise legislation comprises:

- Civil Aviation Act 2012. This requires the CAA to make information about the environmental performance of the aviation sector available to the general public and measures taken to limit adverse environmental effects.
- Civil Aviation Act 2006. This includes measures to strengthen the powers available to control noise.
- Environmental Noise (England) Regulations 2006 (as amended). This requires certain airports to prepared Noise Action Plan, which must be reviewed every 5 years.
- Aerodrome (Noise Restrictions (Rules and Procedures) Regulations 2003. This applies to civil airports in the EU with more than 50,000 movements a year.
- Environmental Noise Directive 2002/49/EC 2002 concerning the assessment and management of environmental noise from transport
- Aeroplane Noise Regulations 1999. This deals with noise certification of certain aircraft
- Control of Pollution Act 1974. This provides a means for regulating construction noise

Summary of Noise Policy

Noise policy is contained in a suite of documents including the:

- National Planning Policy Framework (NPPF) 2019
- Airports National Policy Statement (ANPS) 2018
- Beyond the Horizon – the future of UK aviation: making best use of existing runways' 2018.
- The Aviation Policy Framework (APF) 2013
- The Noise Policy Statement for England (NPSE) 2010
- The National Planning Practice Guidance (PPG) 2014, as amended.
- Policy CS3 of the Core Strategy (*'Environmental impacts and flood risk management'*)

The NPPF (paras 170e &180a/b) says proposed development should not adversely affect health and quality of life by reason of noise amongst other environmental factors.

Paragraph 182 however says noise mitigation should not place unacceptable restrictions on existing businesses.

The core vision of the Noise Policy Statement for England (NPSE) is to: *"promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development"*. It aims to avoid, minimise, mitigate and where possible reduce significant adverse impacts on health and quality of life.

Paragraphs 2.19 & 2.21 of the NPSE introduced the following concepts and definitions to categorise different noise effects on health and quality of life:

- 'No Observed Adverse Effect Level' (NOAEL). This is the level below which no effect can be detected, and no mitigation is required.

- ‘Lowest Observed Adverse Effect Level’ (LOAEL). This is the level above which adverse effects on health and quality of life can be detected. At this level, noise starts to cause small changes in behaviour and / or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise.
- ‘Significant Observed Adverse Effect Level’ (SOAEL). This is the level above which significant adverse effects on health and quality of life occur.

The first aim of the NPSE (para 2.23) is to avoid SOAEL. Its second aim (para 2.24) applies where noise lies between LOAEL and SOAEL. *“It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development. This does not mean that such adverse effects cannot occur.”* The NPSE is a material consideration of significant weight.

The Planning Practice Guidance (PPG) June 2019 defines SOAEL as:

- *Noise which causes a material change in behaviour and / or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise.*
- *Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep.*
- *Quality of life diminished due to change in acoustic character of the area.*

The PPG’s ‘Noise exposure hierarchy table’ reflects the aims of the NPSE, although paragraph 004 says that where SOAEL cannot be avoided, the planning process should consider whether appropriate mitigation can reduce the noise impacts to an acceptable level.

The PPG says: *“if external amenity spaces are an intrinsic part of the overall design, the acoustic environment of those spaces should be considered so that they can be enjoyed as intended”*. It says noise impacts on external amenity spaces may be offset if the residents of those dwellings have access to (including):

- A relatively quiet façade (containing windows to habitable rooms as part of their dwelling, and/or a relatively quiet external amenity space for their sole use, (e.g. a garden or balcony).
- A relatively quiet, protected, nearby external amenity space for sole use by a limited group of residents as part of the amenity of their dwellings, and/or
- A relatively quiet, protected, external publicly accessible amenity space (e.g. a public park or a local green space designated because of its tranquillity) that is nearby (e.g. within a 5 minutes walking distance).

The PPG identifies 4 types of noise mitigation. These are: reducing noise at source; optimising the distance between the noise source and noise-sensitive receptors; using planning conditions / legal obligations to restrict noise producing operations; and noise insulation. As a statement of national planning policy, the PPG is a material consideration of significant weight.

The APF (paras 3.37 and 3.38) requires airport operators to offer acoustic insulation to noise-sensitive buildings, such as dwellings, schools and hospitals exposed to levels of

noise of 63 dB LAeq,16h or more. 'LAeq' refers to *'the equivalent continuous A-weighted sound pressure level'*. This approximates the average human hearing response to noise in different frequencies over a defined period and '16h' refers to 07:00-23:00 hours.

The APF (para 3.17) regards: *"the 57dB LAeq 16h contour as the average level of daytime aircraft noise marking the approximate onset of 'significant community annoyance'.* Paragraph 3.36 says: *"The Government continues to expect airport operators to offer households exposed to levels of noise of 69 dB LAeq,16h or more, assistance with the costs of moving."*

Paragraphs 3.34-3.35 of the APF deals with 'night noise': which is the period from 23:00 to 07:00 Hours. It does not set minimum levels at which noise impacts should be mitigated, but it says the costs on local communities from aircraft noise are higher during the night, particularly the health costs associated with sleep disturbance. The Government expects the aviation industry to make *'extra efforts'* to minimise the demand for night flights and to mitigate noise impacts through the *'use of best in class'* aircraft. Where noise mitigation schemes already exist, the APF expects these to be reviewed. The APF is a material consideration of significant weight.

The CAA conducted a *'Survey of Noise Attitudes'* (SoNA) in 2014, with a results report issued in 2017. The SoNA report concludes that public sensitivity to aircraft noise has increased, and the same percentage of people who previously reported to be significantly annoyed at noise contour 57 dB LAeq16hr, now occurs at 54 dB LAeq16hr. It also considered the merits of using different metrics to assess noise but it concluded (para 8.10) that evidence-based decisions, such as those taken on planning applications, should continue to use the 'LAeq,16h' noise metric.

The same conclusion is reported in paragraph 2.10 of the DfT *'Consultation Response on UK Airspace Policy: A framework for balanced decisions on the design and use of airspace'* 2017. Paragraph 9 says: *"policies set out within this document provide an update to some of the policies on aviation noise contained within the APF and should be viewed as the current government policy."* The 'Airspace Consultation Response' expects the government to develop aviation noise policy through the Aviation Strategy consultation process. The SoNA and Airspace Consultation response are a material consideration of moderate weight.

The DfT Green Paper *'Aviation 2050 – The Future of UK Aviation'* (2018) contains draft policy on the management of aviation noise. It sets out proposals to lower the point at which noise mitigation should apply. The Government acknowledges this would impose increased costs on the aviation industry, but it considers it is necessary to give impacted communities a fair deal. The following measures are proposed in the Green Paper:

- to extend the noise insulation policy threshold beyond the current 63dB LAeq16hr contour (in the APF) down to a 60dB LAeq16hr LAeq noise contour.
- to require all airports to review the effectiveness of existing noise insulation schemes. This should include how effective the insulation is and whether other factors (such as ventilation) need to be considered, and also whether levels of contributions are affecting take-up
- the Government to issue new guidance to airports on best practice for noise insulation schemes, to improve consistency.
- for airspace changes which leaves dwellings in a 54dB LAeq 16hr noise contour, its occupants would be eligible for financial assistance with noise insulation.

The Green Paper uses the L_{Aeq16h} as the appropriate metric for noise mitigation. This is consistent with the SoNA report. The Green Paper is as a material consideration of moderate weight.

WHO 'Guidelines for Community Noise' 1999 says: *"When noise is continuous, the equivalent sound pressure level should not exceed 30 dB(A) indoors, if negative effects on sleep are to be avoided"*. It says single noise events at 45 dB L_{Amax} can also contribute to sleep disturbance. This assumes that a noise reduction of 15 dB will be achieved from outside to inside noise levels even with open windows.

To protect the majority of people from being seriously annoyed during the daytime and evening, the WHO says outdoor sound level should not exceed 55 dB $L_{Aeq16hr}$ on balconies, terraces and outdoor living areas. They say 'Moderate annoyance' occurs at 50 dB $L_{Aeq16hr}$. These values are reflected in the WHO 'Environmental Noise Guidelines for the European Region' 2018. The 'WHO' guidelines are not translated in to UK policy. To that extent they are a material consideration of low to moderate weight.

Current position at Bristol Airport: Noise controls in the '10 mppa' planning permission

The 10 mppa permission includes conditions to limit and mitigate noise impacts.

Condition 30 limits the 57dB $L_{Aeq16hr}$ day time noise contour to 12.42 sq km with annual reporting required to demonstrate compliance.

Condition 31 requires acoustic insulation to residential properties in a 63dB $L_{Aeq,16hr}$ day time noise contour. The detailed approved scheme however also included noise mitigation grants for the occupants of dwellings in 57 and 60 $L_{Aeq,16hr}$ noise contours. The scheme enables residents in these contours to apply to BAL for noise insulation grants to improve the acoustic performance of the building and to mitigate the impacts of aircraft noise. To date BAL say 75% of residents who are eligible for noise insulation grants have applied for and been given grants. The sums within the approved grant scheme are set out under the heading 'Mitigation'.

Condition 36 applies a noise 'quota-count' system. This limits the cumulative impact of night-time noise from flights between 23:30 and 06:00 Hours during the British Summer Time (BST) and British Winter Time (BWT). The louder the aircraft the more points it scores, although flights involving some types of noisier aircraft (referred to a quota count score 4 and above) are not allowed during these hours.

The condition caps the 'British Summer Time' (BST) to 1260 points, with 900 points allowed in 'British Winter-Time' (BWT). The condition allows unused points from one season to be carried over or "borrowed" to the next season subject to restrictions. Borrowing more than 10% of unused points must however be reduced by twice the amount for the next season.

Condition 38 limits night-time flights to a maximum of 4,000 per year between 23:30 – 06:00 Hours, with no more than 3000 flights in the BST and no more than 1000 flights in the BWT.

Condition 39 limits flights in the so-called 'shoulder-periods' (06:00 to 07:00 Hours and 23:00 to 23:30 Hours) to no more than 10,500 in any calendar year.

The sum of conditions 38 and 39 allows BAL up to 14,500 flights per annum between 23:00 and 07:00 Hours, which is often referred to as the 'night-time' period.

A separate 'Environmental Improvement Fund' secured under the Section 106 legal agreement as part of the 10mppa permission commits BAL to an annual fund to offset the environmental impact of the airport on the nearest Parishes. Local residents (within the defined area) can apply to the fund for noise mitigation to their houses. Local groups within the designated parishes may also apply for mitigation for non-residential buildings such as schools or other noise sensitive buildings. Funding decisions are made quarterly by a Committee comprised jointly of North Somerset Councillors and Airport representatives.

The airport is also required to submit annual records to show that it has complied with the requirements of the planning conditions. Issues concerning noise are also considered at an 'Environmental Effects Working Party', which meets quarterly and operates outside the planning system. This is made up of representatives from the local parish councils, the Council's Environmental Protection Team and representatives from Bristol Airport.

Some objectors question the rationale for the current flight caps. They say the figures in the planning conditions are arbitrary, and they simply reflect what BAL requested. They say allowing up to 3,000 night-time flights during British Summer Time (BST) when people are more likely to sleep with their windows open and allowing up to 10,500 flights per annum in the shoulder periods, has increased sleep disturbance. Objectors say flight numbers during sensitive periods (between 23:00 and 07:00 Hours) should be reduced if this current application is allowed. BAL say these caps represent a small proportion of their overall operation and they are essential to their business.

The Council took independent consultant's advice on noise impacts (and other matters) during consideration of the 10mppa application. The noise mitigation package was considered to strike the right balance between reducing the impacts of aircraft noise while allowing BA to grow, as endorsed in the 2003 Government White Paper '*The future of Air Transport*', that applied at that time. Importantly, this also took into consideration a previous planning permission that was granted by the Secretary of State in 1995 (ref no. 1287/91) for a replacement passenger terminal and re-routed section of the A38, which, whilst imposing the quota count limit, did not cap the night-time flights at all. This enabled BAL to achieve 4,000 night-flights per annum as far back as 2003 when it served only 4 mppa.

Imposing an absolute cap of 4,000 night-time flights per annum in the 10 mppa planning permission in addition to the quota count system, was considered necessary to prevent further unrestricted growth of night-flights, which could otherwise happen with the potential of causing significant adverse impacts on sleep disturbance.

The tables below show the numbers of flights in the 'night-time' and 'shoulder' periods and the quota count points score between 2012/2013 and 2017/2018 (Source BAL).

Night-Time flights*

Year	Summer	Allowance	Difference	Winter	Allowance	Difference
2012/13	1861	3000	1139	253	1000	747
2013/14	1888	3000	1112	233	1000	767
2014 /15	2210	3000	790	232	1000	768
2015/16	2378	3000	622	244	1000	756
2016/17	2704	3000	296	298	1000	702
2017/18	2991	3000	9	353	1000	547

* Defined as between 23:30 and 0600

Shoulder Period Flights*

Year	Allowance	Number of flights	Difference
2013	10,500	3,980	6520
2014	10,500	3,995	6505
2015	10,500	4,656	5844
2016	10,500	5,182	5318
2017	10,500	5,082	5418

* Defined as between 23:00 and 23:30 and 0600 and 0700.

Quota Count

Year	Summer	Allowance	Difference	Winter	Allowance	Difference
2012/13	938	1260	322	117	900	783
2013/14	975	1260	285	100	900	800
2014 /15	1145	1260	115	106	900	794
2015/16	1180	1260	80	96	810	713
2016/17	1354	1260	96 over	120	807	685
2017/18	1522	1260	262 over	152	639	497

The stand out results are that since 2012/2013:

- The maximum number of night-time flights within any 12-month period (from the start of the BST) is 3,344, which is well-below the 4,000-annual cap. The main reason for this is that night flights in the British Winter Time (BWT) have not exceeded 353 in any 12-month period since 2012.
- Night-time flights in the BST by contrast have steadily increased each year and they reached 2,991 in 2017, only 9 flights below capacity.
- The BST quota count score (1260 points) has however been exceeded in the past two summers, albeit this is permitted under the borrow and carry-over allowance in this condition.

- The number of flights in the shoulder periods since 2012 has been significantly below the 10,500 capacity with the highest figure being 6,520 in 2013. The quota count scores also operate within the current quota count system.

Projected Flight Numbers

In 2017 when 8.2 million passengers used BA, 76,200 flights took place. This includes commercial and private flights (a flight is a 'departure' or 'landing'). Flights between 23:30 and 06:00 Hours accounted for 3,387 (or 4.4%) of all flights and 5,082 flights (6.6%) occurred in the 'shoulder' periods. This means that 67,817 flights (or 89%) of all flights occurred in the daytime between 07:00 and 23:00 Hours. There is no restriction in the 10 mppa permission for the number of flights during the day-time hours (07:00-23:00 hours). 76,200 annual flights in 2017 averages 208 flights per day (assuming an even daily split), but there are clear seasonal and daily differences, with more flights occurring in the summer months and during other peak periods, such as Christmas and Easter.

BAL, through independent modelling, project that flight numbers would increase to approximately 87,000 per annum by the time 10 mppa is reached. This averages 240 flights per day, but there will be daily/seasonal differences. At 12 mppa, which is expected in 2026, flight numbers are expected to reach 97,400 per annum, which is 10,400 more flights per annum than at 10 mppa (an 11% increase). An even daily average would yield 267 flights, but again as at present, there will be periods of higher and lower daily flights. Some note that the application proposes a 20% increase in annual passenger numbers between 10 and 12 mppa, yet the increase in flights is 11%. The application shows flight numbers are determined by the type of flight (leisure or business), the passenger capacity of the aircraft and occupancy ratio. It also indicates that airlines are progressively replacing their fleet, and new aircraft typically have larger passenger capacities than older similar stock. This allows BAL to project that the increase in flights is proportionately less than the increase in passenger numbers between 10 and 12 mppa. Paragraph 3.2 of the Green Paper 'Aviation 2050' highlights this when it says airlines use: *"larger aircraft, which has meant aircraft movements have only increased by 13% to support 35% growth in passengers"*, since 2010.

BAL say that removing the night-time seasonal restrictions is essential to their growth, and the result of this could yield up to 3,500-3,600 night-time flights in the first BST if planning permission is granted. This would average 17 flights per night during the BST (assuming an even nightly split) compared to an average of 14 flights per night under the current permission. Nightly averages will however vary according to seasonal peaks and BAL say that the busiest summer peaks could yield 20+ flights per night between 23:30 and 06:00 Hours. They suggest night-time flights during the BWT is likely to remain at 300-400: which averages 3-4 per night.

BAL indicate that 4,000 annual flights at 12 mppa between 23:30 and 06:00 Hours would represent 4.1% of all annual flights, compared with 4.4% at 8.2 mppa in 2017. They say that 3,500-3,600 night-time flights in the BST could operate within the current 1260 points quota count allowance based on the 2018 noise classification points system issued by NATS (AIP Supplement 049/2018). This supersedes the previous version set out in condition 36 of the 10 mppa permission. A comparison of the former and current quota points system is set out in the table below.

Former Noise Classification in the 10 mppa consent	Former Quota Count score system for 10 mppa consent	Quota Count Classification from 2018	Quota count points system from 2018
		Aircraft below 81 EPNdB	0
		Aircraft Between 81-83.9 EPNdB	0.125
		Aircraft Between 84-86.9 EPNdB	0.25
Aircraft below 90 EPNdB	0.5	Aircraft Between 87-89.9 EPNdB	0.5
Aircraft between 90 – 92.9 EPNdB	1	Aircraft Between 90-92.9 EPNdB	1
Aircraft between 93 - 95.9 EPNdB	2	Aircraft Between 93-95.9 EPNdB	2
Aircraft between 96 - 98.9 EPNdB	4	Aircraft Between 96-98.9 EPNdB	4
Aircraft between 99 – 101.9 EPNdB	8	Aircraft Between 99-101.9 EPNdB	8
Aircraft Greater than 101.9 EPNdB	16	Aircraft Above 101.9	16

EPNdB - Effective Perceived Noise Decibels, the measurement used in aircraft noise certification

Quota count categories 0-0.25 of a point were introduced in 2018. BAL indicate that most aircraft that will operate from BA between 10 and 12 mppa will fall within these new lower quota count categories (typically 0.5 point per flight or below), which means they score fewer quota count points per flight than they did under the previous quota count points system. Most aircraft produce less noise on arrival than they do during departure. This is due to the extra engine power required during take-off.

BAL estimate that around 9,000-9,500 flights per annum would occur in the 'shoulder periods' at 12 mppa. This is a significant increase compared with 5,082 flights during the shoulder periods in 2017, but it remains below the present cap of 10,500 flights per annum in the 10 mppa permission. If BAL did achieve 9,500 flights per annum in the shoulder periods at 12 mppa, it would represent 9.5% of all flights projected flights at 12 mppa. In 2017 when BA served 8.2 mppa, 6.6% of flight occurred in the shoulder periods.

BAL estimate the average daytime flights between 07:00 Hours and 23:00 Hours at 12 mppa would be around 250 in the BST and 203 in BWT. This compares with 225 BST and 182 BWT at 10 mppa: an increase of 25 and 19 flights respectively. Seasonal and holiday peaks will however result in some busier periods.

Assessment

Chapter 7 of the BAL's Environmental Statement (ES) examines the impacts of the proposal in terms of: air noise; noise from ground-based operations; construction noise and road traffic noise. Officers are satisfied that the scope of the assessment is sufficient.

BAL use different noise levels to define the 'Lowest Observed Adverse Effect Level' (LOAEL) and the 'Significant Observed Adverse Effect Level' (SOAEL) for different sources of noise. This complies with the 'Noise Policy Statement for England' (NPSE)

2010 which says (para 2.22) it is not possible to have a single objective noise-based measure that defines 'SOAEL' from all sources of noise in all situations.

Air Noise

Table 7.3 of the ES sets out the technical guidance that has been considered to assess air noise. Air noise is that which is produced by aircraft from the start of the departure-roll along the runway, on take-off, whilst flying and when landing. It includes noise from reverse thrust as the aircraft slows on landing. Aircraft taxiing is a 'ground noise', as is aircraft noise at an aircraft stand, including noise from servicing equipment. Before the results of the assessment are considered, it is important to consider the scope and assumptions which underpin the results in terms of Aircraft Fleet Mix; Noise Metrics and Noise Contours; Airspace Change and Noise Assessment Levels.

Aircraft Fleet Mix

Para 6.26 of 'the future of UK aviation: next steps' says: "New generation aircraft now entering into service in the fleets of major airlines...are up to 50% quieter on departure and 30% quieter on arrival than the aircraft they are replacing, and new aircraft must now comply with more stringent international noise standards".

The rate at which quieter aircraft come into operation however depends on the phased retirement of older aircraft, order numbers for new stock and the operational commencement of new aircraft.

To give an overview of the transition towards quieter aircraft at BA from all commercial flights, the table provided by BAL shows the percentage of commercial flights that are expected from the two largest airline operators based at BA (easyJet and Ryan Air) between 2018 and 2026. BAL then They summarise each company's order plans for new aircraft.

Table showing percentage of commercial passengers and commercial flights projected between 2018 and 2026 from the two largest aircraft operators based at BA: easyJet and Ryan Air.

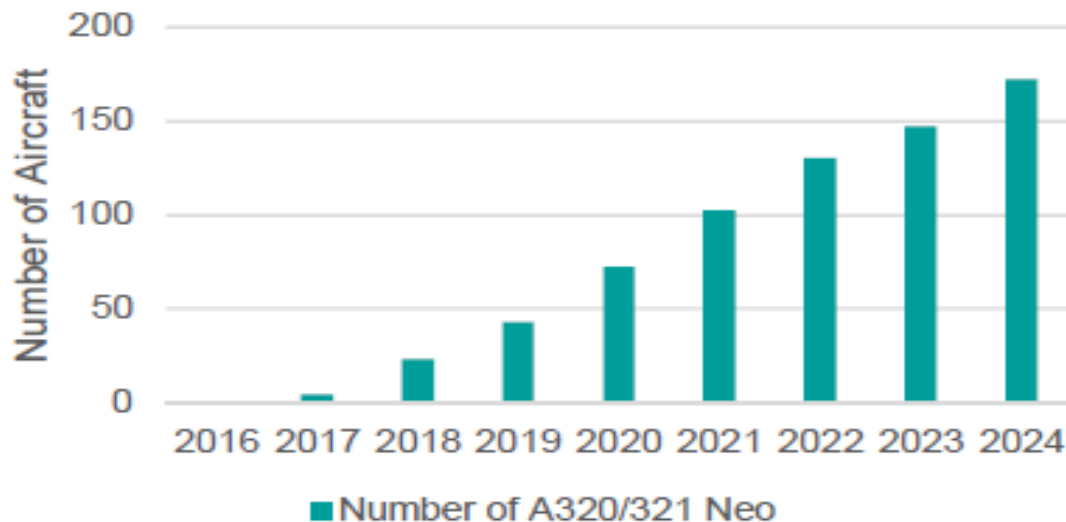
% of commercial passengers	2018	2019	2020	2021	2022	2023	2024	2025	2026
easyJet	49%	48%	47%	46%	46%	47%	46%	46%	45%
Ryanair	17%	17%	17%	17%	17%	17%	18%	18%	19%
Combined Total	66%	65%	64%	63%	63%	64%	64%	64%	64%
% of Flights at BA									
easyJet	40%	40%	39%	39%	40%	39%	39%	39%	39%
Ryanair	14%	14%	14%	15%	15%	15%	15%	16%	16%
Combined Total	54%	54%	53%	54%	55%	54%	54%	55%	55%

Source: BAL management forecasts (30.07.2018)

There are already two types of modern, quieter aircraft (A320neo and A321neo) being operated by easyJet. Correspondence from easyJet says: “as at 30 September 2018, thirteen A320neo aircraft were in operation [across its entire fleet] with a further 87 to be delivered by August 2022. Two of the larger A321neo aircraft were also in the fleet at this date, with a further 28 to be delivered by October 2020”.

The bar chart below shows the expected growth of A320/321 Neo aircraft across easyJet’s fleet up to 2024. This is expected to reach 170 aircraft by 2024. BAL’s validation consultants (Mott MacDonald) say this will increase to 240 aircraft by 2026.

easyJet A320/321neo Network-wide Fleet Deployment



Source: MM analysis of CAPA fleet data

easyJet do not indicate how many of their new fleet will be located at BA, but BAL say: “easyJet has entered into an agreement with Bristol Airport which encourages the deployment of more fuel-efficient next generation aircraft”. It is unclear whether an ‘agreement’ means a contract, but BAL say that they expect 10 or 11 A320 / 321neo aircraft (combined) to be operating at BA in 2021. This equates to just under 10% of easyJet’s network-wide Neo fleet that is expected to be in service in that year. BAL expect this increase to 14-15 aircraft by 2026 and this is expected to represent about 7% of easyJet’s neo fleet at that time.

BAL say they consulted easyJet regarding their future fleet plans for BA and they indicated that the ‘Neo’ share is assumed to be around 67% of operations in 2021, rising to 80% by 2026. Comparative figures are not provided for Ryanair, but Ryanair say they will take delivery of 200 new aircraft over the next 6 years, but this does not commit to how many of these might operate from BA. BAL report that other airlines operating at BA (KLM and TUI) have orders placed for increased quieter aircraft within their fleets.

With most airlines operating at BA (and the industry in general) gradually replacing older stock, it is reasonable to assume that there will be a progressive growth in the number of quieter aircraft operating at BA between 10 and 12mppa. The table below extracts data from Tables 7D.9-7D.12 of BAL’s Noise and Vibration Assessment and it shows BAL’s projections for the number of new aircraft types operating at 2012 and 2026 respectively.

Aircraft Type	Projected No. of Aircraft movements per annum		
	2018 figures @ 8.65 mppa	Projected at 10 mppa 2021	Projected at 12 mppa 2026
Boeing B738MAX	0	3,579	17,143
Airbus A320 neo(A320-211)	230	27,357	32,872
Airbus A321 neo (A321-232)	0	1,128	4,239
Total	230	32,064	54,254

In 2021, when BAL expect to reach 10mppa, they contend that 32,064 annual flights (36% of all flights) would be from quieter aircraft than currently operate. By 2026 they project 54,254 from 97,400 annual aircraft flights (54%) would involve quieter aircraft.

A 54% modern fleet mix projection at 2026 is proportionately less than easyJet's estimated 80% modern fleet mix at BAL by 2026. If easyJet's projections are typical of other airlines fleet mix at 2026 (this is not confirmed) then it suggests that BAL have applied a less than best case scenario to their projections. BAL's consultants (Mott MacDonald) suggest BAL's projections are 'modest'.

BAL's fleet mix projections were made before the demise of Thomas Cook Ltd and the grounding of the Boeing B738MAX due to safety concerns. Thomas Cook Ltd is understood to have had 4 aircraft based at BA and this yielded up to 500,000 passengers in 2018 at BA. BAL say the loss of Thomas Cook service is likely to result in some short-term reduction in passenger numbers although they have announced that other operators including TUI and Lufthansa are looking to expand their operations at BA, and it is expected that the short-term loss from Thomas Cook will be backfilled. BAL say that they still expect to reach 10 mppa in 2021 and 12 mppa by 2026.

The '*MAX Progress Report*' released by Boeing on 11th November 2019 in response to recent air accidents says that (taken from its website): "*resumption of MAX deliveries to airline customers could begin in December, after certification, when the FAA issues an Airworthiness Directive rescinding the grounding order*". A report on the BBC website from 17th December 2019 however says Boeing will temporarily halt production of 737 Max until technical issues are resolved, with no date as to when this will be. BAL says in the unlikely event that the 737 MAX does not return, other similar modernised aircraft types would take its place by 2026.

It is not possible to verify BAL's fleet mix projections, but the claimed proportions of quieter aircraft that are expected to be operating at BA in 2021 and 2026 are more reserved than the fleet wide projections from some airlines currently operating at BA. The BAL aircraft fleet projections are therefore considered reasonable.

Noise metrics and noise contours

BAL use L_{Aeq} as the primary means to assess noise impacts of the proposal. This approach is appropriate since the SoNA report which considered the use of different noise metrics says: "*evidence-based decisions should continue to use $L_{Aeq,16h}$* ". The same approach is recommended in the Green Paper. although this is supplemented through other metrics, including ' L_{Amax} ', which uses noise frequency modelling. The use of supplementary metrics is also supported in paragraph 3.19 of the APF.

BAL establish the baseline and projected noise contours (the extent of noise experienced on the ground) using the Federal Aviation Authority (AEDT Version 2d) software program.

Officers consider this is acceptable and note that the CAA ‘*Method and modelling of noise contours at Low Levels*’ applies a +/- 1 dB tolerance to determine noise contours.

Airspace Change

The CAA’s ‘*Airspace Modernisation Strategy*’ (AMS) 2018 indicates that technological advances in airspace management will enable more efficient flight paths to be designed, with the advantage of reducing holding stacks and noise impacts. Paragraph 1.28 of ‘*Making best use of existing runways*’ 2018, says: “*flight path changes will need to follow the CAA’s airspace change process, including a full assessment of the likely environmental impacts, consideration of options to mitigate these impacts, and the need to consult with stakeholders who may be affected*”.

The CAA, with BAL, initiated a permanent airspace change process in October 2018 (CCA ‘ID reference’ ACP-2018-55). The timeline for this process is that design appraisal work will continue in to 2020 before proposals are released and consulted on in 2020-2021. Evaluation of proposals by the CAA and DfT is expected to take place during 2022-2024. The Council, local Parish Councils and other stakeholders are consultees on this process which is separate to the planning application process. BAL have not factored future airspace change in to their noise assessment in this application which is acceptable.

Noise Assessment Levels

BAL’s thresholds for assessing aircraft noise impacts are shown in the table below.

	LOAEL***	SOAEL**	UAEL*
Daytime 07:00 -23:00 Hours	51 dBL _{Aeq,16h}	63 dBL _{Aeq,16h}	69 dBL _{Aeq,16h}
Night Time 23:00-07:00 Hours	45 dBL _{Aeq,8h}	55 dBL _{Aeq,8h}	63 dBL _{Aeq,8h}

*‘UAEL’ refers to Unacceptable Adverse Effect Level’, which derives from the APF.

**Day time SOAEL (63 dBL_{Aeq,16h}) corresponds to the onset of acoustic mitigation in the APF.

***The daytime and night time LOAEL reflect the results of the UK Airspace Change proposal. The night SOAEL (55dB) is referred to in the World Health Organisation ‘*Night Noise Guidelines for Europe*’ Guidelines (2018) as an “Interim target”. Officers agree that the decibel day and night time level thresholds for LOAEL, SOAEL and UAEL are acceptable.

Some objectors say these impact levels are too high relative to the World Health Organisation’s (WHO) ‘*Environmental Noise Guidelines*’ October 2018. This recommends that 45 dBL_{den} (as the level at which adverse health effects start to occur during the day, while 40 dBL_{night} level is the level at which sleep disturbance can occur. L_{den} refers to Annual average 24h day, evening, night noise levels. These guidelines have not however been adopted as Government policy and the Green Paper ‘*Aviation 2050*’: “*wants policy to be underpinned by the most robust evidence on these effects, including the total cost of any action and recent UK specific evidence, which the WHO report did not assess*”. It is therefore considered that the weight to be given to the WHO’s ‘Environmental Noise Guidelines’ is ‘low’ at this time.

BAL’s Air Noise Assessment

BAL’s baseline noise surveys (day and night) were undertaken during March-April 2018 at the locations in the table below.

Receptor	Location	Dates of noise survey
A	Cooks Bridle Path	14 March to 04 April 2018
B	Downside Road, Lulsgate Bottom	13 March to 05 April 2018
C	School Lane, Lulsgate Bottom	13 March to 03 April 2018
D	Red Hill (A38), Redhill	14 March to 05 April 2018

Officers consider that the survey period is acceptable, and the survey locations provide a broad range of noise levels that would be experienced around the airport. The tables below show the noise monitoring locations and results obtained for each and these are taken from Tables 7C.4 to 7C.6 of Appendix 7C (Chapter 7) of the ES. These are based on average values across the LAeq dB16 hr period.

Table 7C.4 Long term noise monitoring results – all receptors, average 16-hour day (07:00 – 23:00)

Metric	Receptor			
	'A' Cooks Bridle Path	'B' Downside Road	'C' School Lane	'D' Redhill
LAeq,16h dB	53	58	59	50
Average LAF90 dB	38	49	47	42

Note: LAF90 is a term used for where noise level exceeded for 90% of the time and is normally used to describe background noise levels.

Table 7C.5 Long term noise monitoring results – all receptors, average 12-hour day (07:00 – 19:00)

Metric	Receptor			
	'A' Cooks Bridle Path	'B' Downside Road	'C' School Lane	'D' Redhill
LAeq,12h dB	54	59	60	51
Average LAF90 dB	39	51	48	43

Table 7C.6 Long term noise monitoring results – all receptors, average 8-hour night (23:00 – 07:00)

Metric	Receptor			
	'A' Cooks Bridle Path	'B' Downside Road	'C' School Lane	'D' Redhill
LAeq,8h dB	49	54	54	47
Average LAF90 dB	37	47	42	37

The results show that the average day time noise levels at locations A to D range from 50 to 60 dB L_{Aeq} during the daytime. At night, noise levels at locations A to D range from 45 to 55 dB, with background noise levels around 35 to 45 dB L_{AF90} . Receptor A (Crooks Bridle Path) was mostly impacted by aircraft noise, while Receptors B (Downside Rd) and C (School Lane) are impacted by aircraft and road noise. Receptor D (Redhill) is most affected by road traffic noise. The results are agreed and considered to provide a useful context for BAL's more detailed noise assessments.

Baseline noise levels in the tables below are from 2017. The results were accrued over a 92-day period between 16th June and 15th September using the dB L_{Aeq} metric. This is the period when UK airports are normally at their busiest, and when receptors are likely to be worst affected in terms of people being outside more in the daytime and sleeping with windows open at night. Day-time average values are taken over a 16-hour period (07:00 Hours to 23:00 Hours), while night-time noise is averaged across 23:00 to 07:00 Hours. Baseline results include noise from general aviation. Helicopter noise which represented 3% of the total aircraft movements in 2017 and which is quieter than most aircraft using BA is excluded. The methodology used to ascertain the noise results is considered acceptable.

BAL's noise projections for day and night time noise impacts at 10 and 12 mppa are based on (1) the aircraft fleet mix previously set out and (2) a continuation of the current arrival and departure routes below 7000ft. The latter results in up to 80% of aircraft taking-off and landing into the prevailing wind direction from the west. This produces noise contour areas, from which the number of properties and people within each contour is established. Officers' agree with this approach.

Tables 7D.20 to 7D.22 of BAL's Environmental Statement (reproduced below) give the area, number of dwellings and population counts respectively within each contour. The 2017 baseline corresponds with BAL serving approximately 8.1 mppa. 'Average mode summer day' means the average number of aircraft movements in the daytime (07:00-23:00 BST) or night time (23:00-07:00 BST) between 16 June to 15 September inclusive. The tables include the baseline planning permission of 10 mppa being reached in 2021. The results for 2026 compare the impacts at 12 mppa (e.g. this application is approved and implemented: 'with' development)) and at 10 mppa (e.g. 'without' development). This is a standard approach.

Day time projections

Table 7D.20: Area of land falling within each noise contour, $L_{Aeq,16h}$ average mode summer day

Noise Contour $L_{Aeq,16h}$ (dB)	Contour areas (km ²)			
	Baseline 2017	10 mppa* 2021	12 mppa** 2026	10 mppa 2026*
51 (LOAEL)	37.7	36.9	37.0	29.9
54	19.9	19.6	19.7	16.0
57	11.0	10.7	10.9	8.6
60	6.1	5.9	5.7	4.5
63 (SOAEL)	3.1	2.9	2.8	2.2
66	1.6	1.5	1.4	1.2
69 (UAEL)	0.9	0.9	0.8	0.7

* without development

** with development

Table 7D.21 Number of dwellings falling within each noise contour, $L_{Aeq,16h}$ average mode summer day

Noise Contour $L_{Aeq,16h}$ (dB)	Number of dwellings			
	Baseline 2017	10 mppa 2021*	12 mppa 2026**	10 mppa 2026*
51 (LOAEL)	3250	3150	3100	2200
54	950	900	900	750
57	450	450	450	400
60	150	150	150	80
63 (SOAEL)	20	10	10	10
66	1	1	1	0
69 (UAEL)	0	0	0	0

* without development

** with development

Table 7D.22 Population Count within each noise contour $L_{Aeq,16h}$ average mode summer day

Noise Contour $L_{Aeq,16h}$ (dB)	Population Count *			
	Baseline 2017	10 mppa 2021**	12 mppa 2026***	10 mppa 2026**
51 (LOAEL)	7900	7600	7500	5400
54	2350	2250	2200	1800
57	1050	1050	1150	950
60	300	300	300	200
63 (SOAEL)	50	40	40	40
66	3	3	3	0
69 (UAEL)	0	0	0	0

* The number of people living in the properties in contour areas derives from census data and the number of dwellings and population for each postcode. This is a standard approach to noise assessment.

** without development

***with development

Officers agree that the results are based on the correct noise assessment methodology and they are an accurate projection. The stand-out results are:

- The area of land within the noise contour for the Lowest Observed Adverse Effect Level (LOAEL) noise contour (51 $dBL_{Aeq,16h}$) increases from 36.9km² at 10 mppa (2021) to 37 km² at 12 mppa (2026), but it comprises 50 fewer properties (and 100 fewer people) than it would at 10 mppa (2021). This may appear counter-intuitive, but the shape and position of the 51 $dBL_{Aeq,16h}$ contour at 12 mppa (2026) is different to the 10 mppa (2021) noise contour, when applying the current standard software to establish noise contours.

The 54 $dBL_{Aeq,16h}$ noise contour has a ground surface area of 19.6 km² at 10 Mppa (2021) which encompasses 900 dwellings. This increases to 19.7 km² at 12 mppa (2026), but it affects the same number of properties (and 50 fewer people). The reasons for this are the same as in the previous point (i.e. that the shape and position of the contour changes).

- The size of the 57 dBL_{Aeq,16h} noise contour increases from 10.7 to 10.9 km² between 10 and 12 mppa, but it affects the same number of properties but would comprise 100 more people.
- The 'SOAEL' day-time noise contour area (63 dBL_{Aeq,16h}) decreases from 2.9km² at 10 mppa to 2.8km² at 12 mppa in 2026. This does not however change the number of properties (10) or people (40) in it.
- The number of properties and people in the 'Unacceptable Adverse Effect Level' between 10-12 mppa remains at 0.
- Without the proposed expansion, the number of dwellings and the capacity of the airport remaining at 10 mppa in 2026 the number of properties that lie in the 54 to 60 dB 16h L_{Aeq} noise contours (these comprising all noise contours between the LOAEL and SOAEL) reduces from 1,500 at 10 mppa in 2021 to 1,230 at 10 mppa in 2026. This would arise from a higher proportion of quieter aircraft operating at BA between 2021 and 2026.

The WHO's 'Guidelines for Community Noise' 1999 says serious public annoyance during the daytime and evening, within balconies, terraces and outside living areas, can occur at 55 dB L_{Aeq, 16hr} or above, whereas moderate annoyance occurs at 50 dB L_{Aeq 16hr}. The day time noise contours do not go below 51dB L_{Aeq16h}: this being the 'Lowest Observed Adverse Effect Level'. The inference of LOAEL is that at or below this level, no mitigation is needed. There is not a 55 dB L_{Aeq 16h} noise contour. The nearest is the 54 dB L_{Aeq 16h} contour. The result for this contour shows that it covered an area of 19.9 sq km (affecting 950 properties and 2,350 residents) in 2017. This is projected to reduce to 19.6 sq km at 10 mppa in 2021 (900 properties and 2,250 residents) and slightly increase to 19.7 sq km at 12 mppa in 2026 (900 properties 2,200 residents). These results are accepted. Without development it would reduce to 16 sq km affecting 750 properties and 1,800 people. These reductions arise from a greater proportion of quieter aircraft being operated at BA between 2021 and 2026. This is considered to be an acceptable projection.

Night time projections

Table 7D.23: Area of land falling within each noise contour area, L_{Aeq,8h} average mode summer night

Contour L _{Aeq,8h} (dB)	Contour areas (km ²)			
	Baseline 2017	10 mppa 2021*	12 mppa 2026**	10 mppa 2026*
45 (LOAEL)	46.7	64.5	65.6	54.7
48	25.2	35.8	36.7	29.8
51	13.9	18.8	19.3	15.7
54	7.4	10.3	10.5	8.4
55 (SOAEL)	6.0	8.4	8.5	6.8
57	3.8	5.5	5.6	4.3
60	1.9	2.7	2.7	2.1
63 (UAEL)	1.1	1.3	1.4	1.1

* without development

** with development

Table 7D.24 Number of dwellings falling within each noise contour, $L_{Aeq,8h}$ average mode summer night

Contour $L_{Aeq,8h}$ (dB)	Number of dwellings			
	Baseline 2017	10 mppa 2021*	12 mppa 2026**	10 mppa 2026*
45 (LOAEL)	3750	5150	5050	4150
48	1300	2950	3000	2000
51	650	900	850	750
54	300	450	450	400
55 (SOAEL)	150	300	350	250
57	60	150	150	80
60	1	10	10	10
63 (UAEL)	0	1	1	0

* without development

** with development

Table 7D.25: Population falling within each contour, $L_{Aeq,8h}$ average mode summer night

Contour $L_{Aeq,8h}$ (dB)	Population count			
	Baseline 2017	10 mppa 2021*	12 mppa 2026**	10 mppa 2026*
45 (LOAEL)	9150	12550	12300	10100
48	3100	7150	7250	4900
51	1600	2200	2200	1800
54	700	1050	1100	900
55 (SOAEL)	400	750	800	600
57	150	300	300	200
60	3	40	40	40
63 (UAEL)	0	3	3	0

* without development

** with development

Officers agree that the results are based on the correct noise assessment methodology and they are an accurate projection. The key conclusions are that:

- The noise contour for the Lowest Observed Adverse Effect Level (LOAEL) noise contour (45 $dB_{LAeq,8h}$) increases from 64.5km² at 10 mppa to 65.6 km² at 12 mppa. The 12 mppa contour is however a different shape and it affects 100 fewer properties than at 10 mppa (2021).
- The 'SOAEL' night-time noise contour area (55 $dB_{LAeq,8h}$): would increase from 8.4km² at 10 mppa to 8.5km² at 12 mppa in 2026. This increases the numbers of dwellings in the 55 $dB_{LAeq,8h}$ from 300 at 10 mppa to 350 at 12 mppa.
- The number of dwellings in the 45dB $L_{Aeq,8h}$ (LOAEL) noise contour up to and including the 55dB 8h L_{Aeq} (SOAEL) is projected to 9,750 at 10 mppa in 2021. This reduces to 9,700 properties at 12 mppa in 2026. This suggests that noise impacts from the increase in daytime flights that will arise between 10 mppa in 2021 and 12 mppa in 2026, will be offset by a growing number of quieter aircraft.
- Without the proposed expansion and the capacity of the airport remains at 10 mppa in 2026, the number of properties that lie in night time noise contours 48 to 54dB L_{Aeq} respectively (these comprising all contours between the LOAEL and SOAEL)

reduces from 4,300 at 10 mppa in 2021 to 3,150 at 10 mppa in 2026. For the SOAEL (the 55dB L_{Aeq} night time noise contour) the number of dwellings reduces from 300 at 10 mppa in 2021 to 250 at 10 mppa in 2026. These reductions would also result arise from a greater proportion of quieter aircraft being operated at BA between 2021 and 2026.

BAL use other 'supplementary' metrics to assess noise impacts. One such metric, considers the number of times that a sensitive 'receptor' (for example a dwelling) is likely to experience noise levels at or above 70 dB during the day time (referred to a 'N70' events) and 60 dB at night time (referred to as N'60' events) metrics. This metric is referred to as ' L_{Amax} '. Any ' L_{Amax} ' 'N' value noise levels can be plotted, but 70dB (day) and 60dB L_{Amax} , are most commonly used including the independent UK 'Airport Commission'. Officers consider N60 and N70 values are acceptable measurement values. A weakness of the L_{Amax} metric however is that 'N' values are minimal levels and they do not capture how far above this level each event is. For example, one 'N70' event would include an overflight of 10 seconds at 71 dB L_{Amax} , or an overflight of 30 seconds at 75 dB L_{Amax} . This is one reason why the L_{Aeq} day metric remains the primary method to establish noise impacts and to inform decision making including mitigation.

The L_{Amax} results are therefore used for information only. These are set out in tables 7D.36 to 7D.41 inclusive of Appendix 7D of BAL's Environmental Statement, and these are reproduced below. The figures represent an average summer day across a 92-day period between 16th June and 15th September. 'Average summer day' means daytime hours of 07:00-23:00 and average summer night means 23:00-07:00 Hours.

The following tables model the impacts and projections for N70 and N60 events.

Day time impacts

Table 7D.36 Contour Areas

No. of Events (Flights)	Contour Areas (km2) ' N70 ' average summer day			
	Baseline 2017	10 mppa 2021*	12 mppa 2026**	10 mppa 2026*
10	34	36	32.3	29.1
20	24	27.8	24.2	21.4
50	16.3	13.8	15.2	12.2
100	2.7	4.6	8	4.4
200	0	0.2	0	0.2

* without development

** with development

Table 7D.37 Number of Dwellings

No. of Events (Flights)	Number of dwellings ' N70 ' average summer day			
	Baseline 2017	10 mppa 2021*	12 mppa 2026**	10 mppa 2026*
10	3100	3300	2800	2500
20	1450	2350	1300	1050
50	650	600	650	550
100	20	250	350	250
200	0	0	0	0

* without development

** with development

Table 7D.38 Number of People

No. of Events (Flights)	Population Count 'N70' average summer day			
	Baseline 2017	10 mppa 2021*	12 mppa 2026**	10 mppa 2026*
10	7450	8000	6,800	6100
20	3550	5750	3250	2600
50	1550	1450	1650	1300
100	50	600	900	600
200	0	0	0	0

* without development

** with development

Officers consider that BAL results using the N70 L_{Amax} are an accurate projection. The stand-out results are:

- The number of properties inside the noise contour exposed to 10 flights exceeding 70dB L_{Amax} in the daytime will reduce from 3,300 at 10 mppa (2021) to 2,800 at 12 mppa (2026). This equates to a reduction of 8,000 people at 10 mppa (2021) down to 6,800 at 12 mppa (2026). Without the development properties would reduce to 2,500 at 10 mppa in 2026, which equates to 6,100 people. These reductions are due to a higher percentage of quieter aircraft being operated from BA at 2026 compared to 2021. This is not to say that people living in these contours would not notice an increase in the frequency of day time aircraft noise (as indicated in Tables 7D20-22), but the frequency of noise events above an 'N70' L_{Amax} event is forecast to go down.
- The number of properties inside the noise contour exposed to 20 flights exceeding 70dB L_{Amax} in the daytime will reduce from 2,350 at 10 mppa (2021) to 1,300 at 12 mppa (2026). This equates to a reduction of 5,750 people at 10 mppa (2021) down to 3,250 at 12 mppa (2026). Without development properties would reduce to 1,050 at 10 mppa in 2026, which equates to 2,600 people. The reasons for these reductions are a projected increase in quieter aircraft.
- The size of the 50 flights 'N70' L_{Amax} contour will increase from 13.8 to 15.2 sq km between 10 mppa (2021) and 12 mppa (2026). This comprises results of 650 properties at 12 mppa in 2026 compared with 600 properties at 10 mppa in 2021. The increase between 10 mppa (2021) and 12 mppa (2026) arises because this contour is much closer to the airport where noise from aircraft is louder. Without development property numbers in this contour reduce to 550 at 10 mppa in 2026.
- The size of the 100 event 'N70' L_{Amax} contour will increase from 4.6 to 8 sq km between 10 mppa (2021) and 12 mppa (2026). Without development property numbers remain the same at 10 mppa in 2026 as they would at 10 mppa in 2021.

Night-time impacts

Table 7D.39 Contour Areas

No. of Events	Contour Areas (km2) 'N60' average summer night			
	Baseline 2017	10 mppa 2021	12 mppa 2026	10 mppa 2026
10	56.7	72.3	78.1	65.7
20	3.6	33.5	43.8	32.1
50	0	0	0.7	0
100	0	0	0	0
200	0	0	0	0

Table 7D.40 Number of dwellings

No. of Events	Number of dwellings 'N60'			
	Baseline 2017	10 mppa 2021	12 mppa 2026	10 mppa 2026
10	3800	5150	6350	4400
20	90	2050	3300	2000
50	0	0	1	0
100	0	0	0	0
200	0	0	0	0

Table 7D.41 Population Count

No. of Events	Population Count 'N60'			
	Baseline 2017	10 mppa 2021	12 mppa 2026	10 mppa 2026
10	9300	12450	15500	10800
20	250	5150	8000	5000
50	0	0	2	0
100	0	0	0	0
200	0	0	0	0

Officers asked BAL to explain the significant projected increases between 2017 and 10 mppa permission (2021) for the 10 and 20 frequency. The response was that these steep increases arise due to the peculiarities of the L_{Amax} noise contouring model, rather than a significant increase in night flights between 2017 and 2021. Technical advice from consultants for the Council agrees with this.

Officers consider that BAL results using the N60 L_{Amax} are an accurate projection. The stand-out results are:

- The number of properties inside the noise contour expected to experience 10 events exceeding 60dB L_{Amax} at night will increase from 5,150 at 10 mppa (2021) to 6,350 at 12 mppa (2026). This equates to 12,450 people at 10 mppa in 2021 to 15,500 people at 12 mppa in 2026. The reason for this increase is twofold. Firstly, the proportion of the 4,000-annual night-time flights between 23:00 and 06:00 hours that will take place in the BST will increase. Secondly, there will still be an increase in number of flights that take place in the shoulder periods between 10 and 12 mppa.
- The number of properties inside the noise contour that are expected to experience 20 events exceeding 60dB L_{Amax} at night will increase from 2,050 at 10 mppa (2021) to 3,300 at 12 mppa (2026). This equates to 5,150 people at 10 mppa in 2021 to

8,000 people at 12 mppa in 2026. The reason for this increase is the same as above.

- There are no dwellings expected to experience 50 or more events at 60dB at 10 mppa (2021), but 1 will be affected at 12 mppa (2026).
- Without the proposed expansion, the number of properties in the noise contour expected to experience 10 or less events at 60 dB L_{Amax} at night will reduce from 5,150 at 10 mppa in 2021 down to 4,400 at 10 mppa in 2026. This equates to 12,450 people at 10 mppa in 2021 down to 10,800 people at 10 mppa in 2026. This is the result of a progressive roll out of quieter aircraft between 2021 and 2026.
- Without the proposed expansion, the number of properties in the noise contour expected to experience 20 or less events at 60 dB at night will reduce from 2,050 at 10 mppa in 2021 down to 2,020 at 10 mppa in 2026. This equates to 5,150 people at 10 mppa in 2021 down to 5,000 people at 10 mppa in 2026. The reason for this is the same as in the previous point.

It is noted that there is no prescribed method to correlate L_{Amax} results with those obtained using the L_{Aeq} metric. Moreover, there is no current policy which says how L_{Amax} results should be treated or mitigated. The Green Paper (and the 'SoNA' and Airspace Consultation reports) indicate that future UK aviation policy is likely to comment further on the use of different noise metrics and noise mitigation. Until then however planning applications should be determined in accordance with current policy.

Table 7D.29 of Appendix 7D of BAL's Environmental Impact Assessment (below) quantifies the number of people who might be susceptible to sleep deprivation at a 2017 baseline and then from 10-12 mppa. This applies from 23:00 to 07:00 Hours. The methodology to establish the figures is based on DEFRA guidance: *'Environmental Noise: Valuing impacts on: sleep disturbance, annoyance, hypertension, productivity and quiet'* 2014.

It is considered that this is the most appropriate current objective guidance to determine the potential for sleep disturbance. It indicates that sleep disturbance is most likely to occur between a range of 45 dB to 65dB L_{night} inside bedrooms. L_{night} is the average noise level over an 8-hour night time period based on an average day. This formula used to project the percentage of people at risk of sleep disturbance within each noise contour is taken from Defra and *'The Survey of Noise Attitudes'* ('SoNA') report 2014. The louder the noise contour, the greater the risk of sleep disturbance.

The current research behind the sleep disturbance calculation is based on the annual L_{night} metric and there is no methodology to break this down in to shorter seasonal periods. The L_{night} annual metric is also recommended by the CAA in its assessment of airspace change.

Current and emerging policy says decisions should be based on the $L_{Aeq 16hr}$ noise metric. Results obtained using other metrics such as a noise frequency modelling (L_{Amax}) are treated as supplementary information and they have less weight. Since BAL's results using the $L_{Aeq 16hr}$ noise metric accord with its prescribed methodology, the results shown in the L_{Aeq} tables are reasonable.

Noise Contour Band L_{night} (dB)	% Highly Sleep Disturbed	Highly Sleep Disturbed Population Count			
		Baseline 2017	10 mppa 2021*	12 mppa 2026**	10 mppa 2026*
45 - 50	6	350	600	550	450
50 - 55	9	100	150	150	150
55 - 60	12	20	80	80	60
60 - 65	16	0	6	6	0
65+	19	0	0	0	0
Total		470	836	786	660

* without development

** with development

The sum of the percentages for each noise contour band equals 62%. The balance (38%) would fall into noise bands below 45dB L_{night} , which DEFRA advise should be excluded. The results have been calculated according to the methodology set out by DEFRA and officers consider the results are an accurate assessment. The standout results are:

- Using this methodology, the number of people who would fall within the definition of “highly sleep disturbed” in 2017 when BAL served just over 8.1mppa was 470. This is expected to increase to 836 people by the time the consented 10mppa is reached in 2021. This represents an increase of 88%, which seems disproportionately high. The reason for this is twofold. First, the survey period is from 23:00 to 07:00 hours. This period includes the ‘Shoulder Periods’ (23:00 to 23:30 Hours & 06:00 to 07:00 Hours) which currently allows 10,500 flights per annum. The number of flights in these periods in 2017 was 5,082 and there is projected to be a significant increase in this figure towards the already approved 10 mppa (2021).
- The number expected to fall within the definition of “highly sleep disturbed” reduces from 850 at 10 mppa to 786 at 12 mppa. This assumes that there will be an increase in the proportion of quieter aircraft operating at BA between 2021 and 2026 and this more than offsets the impact of increase flight frequency that will arise in the shoulder periods during this period.
- Without development the number of people defined as “highly sleep disturbed” would be less in 2026 (10 mppa) than would arise in 2021 (10 mppa). Again, this is the result of increased quieter types of aircraft operating at BAL between 2021 and 2026.

Summary of air noise results

Current and emerging policy indicates that decisions should be based on the $L_{Aeq\ 16hr}$ noise metric. Results obtained using other metrics such as a noise frequency modelling (L_{Amax}) are treated as supplementary information and they have less weight. Since BAL’s results using the $L_{Aeq\ 16hr}$ noise metric accord with its prescribed methodology, the results shown in the L_{Aeq} tables are reasonable.

In this context, the projected noise results for the $L_{Aeq\ 16hr}$ day time period (07:00 to 23:00 hours) show that the number of properties in noise contours 54 to 63dB inclusive (these contours are above the ‘LOAEL’ up to the ‘SOAEL’) do not increase between 10 mppa

(2021) and 12 mppa (2026). The projected results for the $L_{Aeq\ 8hr}$ night-time period (23:00 to 07:00 hours) also show a small reduction in the number of properties in the 48 to 55db inclusive noise contours (above the 'LOAEL' and up to the 'SOAEL') at 12 mppa in 2026 compared with 10 mppa (2021).

These results suggest that the difference in aviation noise between 10 mppa (2021) and 12 mppa (2026) is minimal although this relies on a progressive increase in quieter aircraft operating at BA between 2021 and 2026.

Without the development, as a result of quieter aircraft being introduced as technology evolves, there would be a reduction in the size of all day and night time noise contours between 10 mppa in 2021 and 10 mppa in 2026. This emphasises the effect of higher percentages of quieter aircraft operating in 2026.

Air Noise Mitigation

BAL's $L_{Aeq\ 16hr}$ noise contour projections show that despite an increase in day time flights between 10 and 12 mppa, most day time noise contours between 54 and 63 dB $L_{Aeq\ 16h}$ reduce in area. This suggests the type of aircraft that is expected to operate at BA between 10 and 12 mppa is more influential in determining $L_{Aeq\ 16hr}$ noise levels than the projected increase in flight numbers.

The 10 mppa permission projected that the 57dB $L_{Aeq\ 16hr}$ $L_{Aeq\ 16h}$ noise contour would have a surface area of 12.4 sq km. This was conditioned and a noise attenuation grant scheme applies for that noise contour. BAL's noise assessment for the proposed development indicates that the 57dB $L_{Aeq\ 16hr}$ noise contour is expected to be approximately 10.9 sq km (average), although the tolerance within the noise contour software modelling could increase this to circa 11.5 sq km. This means that despite an increase in day time flights between 10-12 mppa, the projected 57dB $L_{Aeq\ 16hr}$ $L_{Aeq\ 16h}$ noise contour will be smaller at 12 mppa than it was projected to be for the 10 mppa permission.

Officers consider that if this planning application is approved a planning condition should be imposed which limits the 57dB $L_{Aeq\ 16hr}$ $L_{Aeq\ 16h}$ noise contour to a maximum of 11.5 sq km, with annual reporting required to demonstrate compliance with this restriction. The effect of this would be to require a higher proportion of flights in and out of BA to be from quieter aircraft. Officers consider this is reasonable operational restriction in the context of the balanced approach in EU Regulation 598-2014 and the NPSE's objective to *"minimise, mitigate and where possible reduce significant adverse impacts on health and quality of life"*.

The table below considers ways in which other reasonable operational restrictions would mitigate noise impacts. It does this by comparing the proposed growth to that already allowed under the 10 mppa permission.

Current 10 MPPA Planning Permission control	Proposed for 12 MPPA application
The quota count condition (which relates to 23:30 to 06:00 Hours), limits the British Summer Time (BST) to 1260 quota count points with 900 points in the British Winter Time (BWT). It allows unlimited unused points to be carried over or borrowed from adjoining seasons, subject to penalties if the borrow or carry over is more than 10%. This has enabled BAL to exceed 1260 points in the past 2 summers to enable them to near 3,000 flights in the BST.	Retain the same quota count points for the BST and BWT (despite removing the direct seasonal caps on flight numbers) but with a transitional arrangement to reduce and eventually remove the borrow or carry over of unused quota points between seasons. This would not limit flight numbers directly, but it would incentivise a greater proportion of quieter aircraft during the core night-time period, when noise sensitivity is likely to be at its greatest. This approach accords with paragraph 3.35 of the APF
The quota count condition has a maximum allowance of 2 quota count points per flight. Quota count 2 aircraft includes those which produce an Effective perceived noise in decibels (EPNdB) rating of 93 to 95.9	This can be reduced to 1 quota count point per flight. Quota count 1 aircraft includes those which produce an Effective perceived noise in decibels (EPNdB) rating of 90-92.9 EPNdB. This means the optimum noise from an individual flight would be less at night than is currently allowed. This will require BAL to only permit quieter aircraft at night.
10,500 flights per annum are allowed in the 'shoulder periods': 23:00 to 23:30 & 06:00 to 07:00 Hours.	The shoulder period restriction would be reduced to 9,500 per annum within BAL's growth plans up to 12 mppa.

Some objectors say that if BAL is allowed to vary the seasonal night time flight restriction of 3,000 flights in the BST, this should only be on the basis that they are capped to a maximum of not more than 15 flights per night between these hours. The rationale for this is that the WHO guidance indicates that sleep disturbance is more likely to occur when noise levels exceed 45dB internal noise levels at 15 or more times per night. Objectors say a limit of 15 flights per night would still allow BAL to concentrate most aircraft movements in to busier periods of the year.

A cap of 15 flights per night is more restrictive than the number of flights per night achievable under the current 10 mppa permission, and records show BAL exceed this at peak times. BAL's very reason for releasing the seasonal restrictions is that it would allow them to condense a greater proportion of 4,000 flights per annum in to peak season, which they say is essential to their growth. This does not obligate the Council to approve it, but WHO guidelines are not translated in to planning policy, and a cap of 15 flights per night would defeat the very object of releasing these caps. Officers consider a cap of 15 flights per night would place an unacceptable operational restriction on the business, and this would be contrary to Paragraph 182 of the NPPF.

The APF (paras 3.37-3.39) expects airport operators to offer financial assistance to the occupants of noise-sensitive buildings, including dwellings, schools and hospitals, exposed

to 63dB LAeq 16h. The Green Paper proposes that this threshold is lowered to a 60 dB LAeq 16h contour. The table below shows the current and proposed noise mitigation fund offered by BAL. This exceeds the minimum policy requirement for acoustic mitigation in that it includes the 57dB LAeq 16hr daytime contour.

10 mppa planning permission	Current sum per property	Sum proposed for 12 mppa application per property	Difference
'SOAEL' day-time noise contour (LAeq,16h 63dB(A).	£5,000	£7,500	+ £2,500
Contour LAeq,16h 60dB(A) Day *	£2,500	£3,750	+ £1,250
Contour LAeq,16h 57dB(A) *	£2,500	£3,750	+ £1,250
'SOAEL' night-time noise contour LAeq,8h 55dB(A)	£0	£5,500	+£5,500 New category

* Subject to match funding from the property owner under the 10 mppa permission, but the match funding requirement would be removed under a 12 mppa permission.

Eligible occupants are not prevented from applying to BAL for additional sums (above those set out above) subject to limitations.

There is no policy in the APF, PPG, Green Paper or development plan that expressly requires airport operators to offer noise attenuation grants to the occupants of properties in the night-time noise contours. The APF however emphasises the costs of aircraft noise at night on local communities at night and the Government's policy is to limit and where possible reduce the number of people in the UK significantly affected by aircraft noise. It is therefore considered that there is a strong case that the acoustic mitigation grant scheme should include night-time noise contours. BAL's proposed scheme includes the 55dB LAeq 8hr noise contour, which corresponds with the onset of SOAEL. It does not however offer mitigation in night time noise contours between the SOAEL (55dB LAeq8h) and LOAEL which comprises the 54, 51 and 48dB LAeq 8hr contours respectively. The 57dB LAeq 16hr day time contour does however envelope the 54dB LAeq, 8h night time noise contour, so it is included by default.

The 'SoNA' survey results shows that the same percentage of people experiencing significant community annoyance at the 57dB LAeq 8hr noise contour now occurs at 54dB LAeq 16h. Hence, if BAL's current noise mitigation scheme included noise mitigation at the 57dB contour, and the same impact now occurs at the 54dB contour, there is a logic in mitigating at that level (54dB LAeq 16hr). There is however no policy (current or emerging) that requires airport operators to mitigate below the 60dB noise contour proposed in the Green Paper.

The Green Paper does refer to the 54dB LAeq 16hr contour or above (para 3.122) as a new eligibility criterion for assistance with noise insulation. This however is for proposals for airspace change which lead to: (i) significantly increased overflight and (ii) resulting in a 3dB increase which leave households in the 54dB LAeq 16hr contour. It does not say this specifically applies to planning applications for airport growth.

Policy CS3 of the Core Strategy requires that: *“Development that...would result in...harm to amenity...will only be permitted if the potential adverse effects would be mitigated to an acceptable level by other control regimes, or by measures included in the proposals, by the imposition of planning conditions or through a planning obligation.”* Other control regimes include the airspace change process.

The noise contours included in the proposed noise mitigation scheme comply with planning policy. In the absence of specific policy that requires acoustic mitigation to be offered to the occupants of properties in a 54db $L_{Aeq\ 16hr}$ noise contour, officers do not consider there is a robust case to pursue this. The same conclusion is reached for the 51 and 48db $L_{Aeq\ 8hr}$ night time noise contours.

Policy does not set out a scale of sums for acoustic mitigation. The Green Paper does however expect existing noise insulation schemes to be reviewed to ensure they remain effective. This should include how effective the insulation is and whether other factors (such as ventilation) need to be considered, and also whether levels of contributions are affecting take-up.

BAL's proposed financial noise mitigation scheme has been increased in value, and this is positive. They say that their enhanced mitigation sum of £7,500 per dwelling for the 63dB $L_{Aeq\ 16hr}$ day time noise contour, would typically equate to the cost of fitting about 5 acoustic windows to habitable rooms (for example 3 bedrooms and two living rooms), based on acoustic lab performance standards of '38R_w'. The '38R_w' window specification would typically reduce outside noise levels by about 7dB more than a standard double-glazed window when shut and it would typically reduce external noise levels by about 30dB inside those rooms. BAL say the sum would also cover the cost of providing separate mechanical ventilation to those same rooms where acoustic glazing is fitted, ensuring fresh air in rooms when windows are closed.

Officers cannot verify whether a £7,500 sum would equate to the number of windows claimed by BAL, since window costs will depend on their size and design. Noise mitigation for different properties might also require different measures such as replacement doors or loft insulation, which might incur additional costs. The APF, which is the policy basis for acoustic mitigation, however only expects airport operators to consider *“financial assistance towards acoustic insulation for households”*. It does not say that they must meet the full costs of mitigation.

BAL offer £5,500 for properties in the 55dB $L_{Aeq\ 8hr}$ night time noise contour. They justify a reduced amount by saying only bedrooms would typically be treated for night time noise, whereas all habitable rooms apply in the day time. Lesser sums (£3,750) are offered for day time noise contours 57 and 60db $L_{Aeq\ 16h}$. A sliding scale of fees is reasonable.

The current scheme has resulted in a 75% take-up rate from those who are eligible. This includes those who are required to match fund. The higher sums offered in the proposed scheme together with the removal of the match-funding is considered acceptable, subject to further details being agreed. BAL also propose a separate *'Airport Environmental and Amenity Improvement Fund'*. This would be an annual fund secured through a S106 agreement from which money for other (non-residential) noise related improvements to other sensitive buildings (for example, including those below the 63dB $L_{Aeq\ 16hr}$ noise contour) could be drawn. This is acceptable but the details of the scheme would need to be agreed through the S106 process.

The current permission to 10 mppa includes, as a planning obligation in the Section 106 legal agreement, an Air Noise Control Scheme which includes operational measures to reduce noise from aircraft when approaching, landing, while on the ground and during the

take-off phase. This promotes the use of continuous descent approaches wherever possible, the avoidance of reverse thrust between 23:00 and 07:00 hours, and other measures to reduce air noise. It also requires BAL to produce an annual monitoring report to demonstrate how it and airlines adhere to. BAL propose the continuation of this scheme including other measures to reduce noise and fuel burn.

Officers consider that the combination of the revised operational restrictions, enhanced acoustic mitigation grant scheme and air noise control scheme would provide an acceptable form of mitigation for air noise having regard to current policy.

Ground Noise

Ground noise includes:

- Aircraft taxiing, or holding with main engines in operation, at any point between the aircraft parking stand and the point at which the aircraft commences its departure roll or exits the runway on arrival. This includes engine start-up and shut down when parked on the stand and all holding on the taxiways and aircraft aprons. It does not specify the proportion of propeller aircraft (which can be noisier), but this would form a small proportion of the overall fleet mix and would have little impact on ground noise levels;
- An aircraft's on-board auxiliary power units (APUs) for supplying cabin air and electrical power, and other aircraft services when the main engines are not operating;
- Mobile ground power units (GPUs) which supply the required electrical power to the aircraft when fixed electrical ground power (FEGP) is not available.
- Aircraft engine ground run tests; and
- Fixed plant and mobile equipment

BAL have assessed ground noise in a similar way to air noise in that the $L_{Aeq, 16h}$, and $L_{Aeq, 8h}$, average noise metrics for day and night time noise impacts. Officers consider this is an acceptable way to assess ground noise. Table 7E.1 of Appendix 7E of the ES below sets out the indicative ground noise assessment criteria for residential properties. Different dB(A) levels are used to distinguish the onset of LOAEL and SOAEL to those used to assess air noise. This is not unusual since there is no single metric for assessing different types or sources of noise and there is no bespoke policy for assessing ground noise. The effect levels set out in BAL's assessment are considered acceptable.

ES Table 7E.1 Ground noise assessment criteria – indicative values for LOAEL and SOAEL

Action	Effect Level	Indicative Daytime level L_{A16h} dB(A)	Indicative night-time level $L_{Aeq, 8h}$ dB (A)
Mitigate and reduce to a minimum	LOAEL	50	45
Avoid	SOAEL	60	55
Prevent	UAEL	70	65

These values refer to outside noise levels. The distinction between 'Avoid' (referring to the 'SOAEL' effect level) and 'Prevent' (the UAEL) is set out in the noise hierarchy table in the Planning Practice Guidance. SOAEL impacts can be avoided by mitigation, whereas UAEL impacts cannot.

ES tables 7E.16 and 7E.18 of Appendix 7E of the ES noise chapter, reproduced below, show the number of dwellings impacted by ground noise.

Table 7E.16 Ground noise dwelling counts, $L_{Aeq,16h}$ average summer day

Contour $L_{Aeq, 16hr}$ dB	Number of dwellings		
	Baseline 2017	10 mppa 2026	12 mppa 2026
50 (LOAEL)	70	80	70
55	20	20	4
60 (SOAEL)	1	1	1
65	0	0	0

Table 7E.18 Ground noise dwelling counts, $L_{Aeq,8h}$ average summer night

Contour $L_{Aeq, 8hr}$ dB	Number of dwellings		
	Baseline 2017	10 mppa 2026	12 mppa 2026
45 (LOAEL)	70	100	100
50	10	40	5
55 (SOAEL)	1	2	3
60	0	0	0

It is notable that some figures in tables 7E.16 and 7E.18 are lower at 12 mppa at 2026 than 10 mppa at 2026. This seems counter-intuitive, but this is due to additional noise screening structures included in the proposed development such as passenger walkway and piers being in place by 12 mppa. Officers are satisfied that these structures / buildings will reduce ground noise impacts.

The ground noise assessment is based on 11 locations or “receptors” (A-K in the tables below). These are calculated noise levels rather than measured, however it is considered that the number of receptors where noise levels have been modelled are sufficient.

The table below set out BAL’s calculated daytime noise levels at different sensitive receptors.

Receptor	Location	$L_{Aeq,16hr}$ (dB)			
		2017	10mppa (2026)	12mppa (2026)	10-12mppa 2026
A	Cooks Bridle Path	61	61	63	+2
B	Downside Road (West), Lulsgate Bottom	58	58	52	-6
C	School Lane, Lulsgate Bottom	52	52	52	0
D	Red Hill (A38) (North), Redhill	45	45	46	+1
E	Winters Lane (South), Redhill	47	47	48	+1
F	Downside Road (South), Downside	53	53	54	+1
G	Downside Road (North), Downside	50	50	49	-1
H	Downside Road (East), Lulsgate Bottom	58	56	51	-5
I	Bridgwater Road (A38), Lulsgate Bottom	50	50	49	-1
J	Red Hill (A38) (South) Redhill	43	43	43	0
K	Winters Lane (North), Redhill	50	50	51	+1

The table below set out BAL's calculated night-time noise levels at the same receptors.

Receptor	Location	L _{Aeq, 8hr} (dB)			
		2017	10mppa (2026)	12 mppa (2026)	10-12mppa 2026
A	Cooks Bridle Path, Downside	56	59	61	+2
B	Downside Road (West), Lulsgate Bottom	52	54	47	-7
C	School Lane, Lulsgate Bottom	46	50	49	-1
D	Red Hill (A38) (North), Redhill	39	41	41	0
E	Winters Lane (South), Redhill	42	44	44	0
F	Downside Road (South), Downside	49	50	51	+1
G	Downside Road (North), Downside	45	47	46	-1
H	Downside Road (East), Lulsgate Bottom	50	53	47	-6
I	Bridgwater Road (A38), Lulsgate Bottom	44	47	46	-1
J	Red Hill (A38) (South) Redhill	37	39	39	0
K	Winters Lane (North), Redhill	44	46	47	+1

The results show that at 12 mppa the number of receptor locations at or above the LOAEL reduce to six and only location 'A' remained above the SOAEL. Five locations within the LOAEL are expected to experience an increase in noise at 12 mppa. The level of the increase is however only +1dB, which is likely to be imperceptible. Two locations are expected to experience a reduction in -1dB. Such a small reduction will be imperceptible. Two locations in the LOAEL are projected to experience a reduction of more than -5dB. This would cause a modest improvement. This arises due to improved acoustic screening in the 12 mppa proposals. It means that locations 'B', 'G', 'H' and 'I' could be expected to experience lower noise at 12mppa in 2026 (if the expansion were to be permitted) than at 10 mppa in 2026 under the current permission. This is due to some revised quieter ground based operational procedures as required by the current application being in place by 2026.

In terms of night-time levels, at 12 mppa, receptor 'A' (Cooks Bridle Path) remains in the 'SOAEL' albeit noise levels are projected to increase by only +2dB, which is likely to be imperceptible. All 7 receptors in the LOAEL at 10 mppa would remain at 12 mppa, but 5 would experience a reduction in the projected noise levels. Most are -1dB, but two locations are projected to experience noise level reductions of -6dB and -7dB respectively, which is a 'moderate' improvement. This results from the proposed additional acoustic barriers at the airport including new buildings in the proposed development. Two locations in the LOAEL are projected to see no change in noise levels, while two others will see an increase of +1dB, which will be imperceptible.

During the day and night time, there would be a reduction in ground noise levels at 12 mppa compared to those expected at 10 mppa. Where there is an increase in noise levels, this would be negligible. The only exception is receptor 'A' on Cooks Bridle Path,

which is the closest receptor to BA, and noise levels at this location are already above the SOAEL: both at day and night. This receptor is likely to see an increase by 2 dB, which is negligible. It is understood that this property has already received noise insulation under the current noise insulation scheme. Its occupants would, however, be eligible to apply to the new proposed scheme, which can increase acoustic mitigation of that property. Even for properties that have already undertaken acoustic improvement, it is practical for further improvements to be made.

Some objectors say that ground noise levels are already excessive and more frequent flights involving aircraft pre-flights checks and taxiing will bring more ground noise. They say, as a minimum, taller noise attenuation walls should be constructed around the entire airport boundary. Furthermore, the use of mobile diesel generators, which are used as part of the pre-flight power check should be banned and replaced with fixed electrical ground power (FEGP), as these are quieter and produce less carbon emissions.

Taller noise attenuation walls would, however, have a minimal impact in reducing noise levels. The applicant's intention is to investigate the feasibility of increasing FEGP within its draft Carbon Management Plan (this is considered in '*Issue 4: Greenhouse Gas Emissions and Climate Change*'). The replacement of mobile diesel generators with a FEGP is supported by officers, but BAL should also commit to contingency measures to phase out mobile diesel generators while FEGP is being assessed, such as portable electric supply.

BAL also propose a '*Ground noise management strategy control scheme*' with the aim of reducing ground noise levels. The detail of this will need to be agreed, but it is an effective way of reducing the effects of ground noise and it will build on BAL's 'Noise Action Plan' that was approved by DEFRA in 2019. This is considered acceptable.

Aircraft Stands

Bristol Airport wants to change the operational restrictions on aircraft Stands 38 and 39 (the most westerly stands at BA), which currently prevent the use of aircraft's on-board auxiliary power units (APU's) between 23:00 and 07:00 Hours. These same restrictions formerly applied to the adjoining stands 34 and 37 but planning permission (ref no. 17/P/1273/F) granted in 2017 allowed APU's to be used for one additional hour at these stands – starting at 06:00 hours through to 23:00 hours. BAL seek the same use for stands 38-39.

Paragraph 7.11.37 of the ES states that: "*This results in slight increase for the dwellings closet to those stands, although the increases are still less than 2 dB and therefore of negligible magnitude*" (see table below).

Noise source	10 mppa Night-Time Noise Level, dB LAeq,8h	12 mppa Night – Time Noise Level, dB LAeq,8h
Stand 38	-	54.2
Stand 39	-	53.6
Total Noise Level	59.3	60.7

Officers' agree with these results and that a 2dB increase is a negligible magnitude. There are no objections to the proposed changes to the use of these stands.

Road Traffic Noise

BAL use the 'Design Manual for Roads and Bridges' produced by Highways England and the DfT 'Calculation of Road Traffic Noise' (CRTN) 1988 to determine the impacts arising from road traffic noise. This is widely used to measure road traffic noise and it is acceptable. The effects of this have been evaluated considering the following scenarios:

- Baseline year (2017)
- 10 mppa 2026 (Without the Proposed Development)
- 12 mppa 2026 (With Proposed Development)

Table 7.55 of the ES noise chapter provides a summary of the road traffic effects between the "Without Development" and "With Development" scenarios. The data is reproduced below.

Receptor Type	L _{Aeq,18h}	No change/Beneficial or adverse	Receptor Nos. in L _{Aeq, T}	Change in noise exposure
Residential - Day				
LOAEL	55 dB L _{A10,18h}	No Change/Beneficial	4	Negligible
		Adverse	80	Negligible
SOAEL	68 dB L _{A10,18h}	No Change/Beneficial	0	N/A
		Adverse	30	Negligible
UAEL	75 dB L _{A10,18h}	No Change/Beneficial	0	N/A
		Adverse	4	Negligible

The assessment criteria for LOAEL, SOAEL and UAEL which derive from the Highways England, Design Manual for Roads and Bridges (DMRB) and the Noise Insulation Regulations are acceptable. The roads covered by the assessment are: Downside Road; A38 (north of airport access); the roundabout airport access; A38 (south of airport access); West Lane and North side Road (airport access). BAL's justification for this was that impacts are likely to be greatest on those roads where airport traffic converges near to the airport. Officers agree with this and consider these roads, which are the main access routes to the airport, are sufficient to give a typical assessment of road traffic noise road. This is not to say that other routes would not incur some level of traffic growth, but these are unlikely to produce noise impacts greater than those in the table above.

As a general rule, a doubling of road traffic numbers would be required for noise levels to increase by 3dB (i.e. a perceptible difference). The projected traffic flows for roads around the airport indicate that this is highly unlikely to happen, therefore it could be considered that as distance increase from the airport, the impact would be less. The impact of additional traffic and its distribution of the highway network is considered in planning issues 7-11 inclusive.

The results of BAL's noise assessment for the onset of LOAEL, SOAEL and UAEL are set out in the table below against the number of residential receptors at a 2017 baseline, at 10mppa in 2026 and at 12 mppa at 2026.

Number of receptors, $L_{A10,18hr}$

Contour $L_{A10,18h}$	Effect Level	Number of Receptors		
		Baseline 2017	10 mppa 2026	12 mppa 2026
55	LOAEL	100	100	100
68	SOAEL	20	30	30
75	UAEL	2	4	4

The table indicates that there would be no change in the number of receptors affected by road noise between the consented 10mppa baseline and the proposed growth to 12mppa by 2026 at each level.

The occupants of properties exposed to road traffic levels at the SOAEL and LOAEL are highly likely to be same people who are eligible for air noise mitigation in that they fall within the 57 dB $L_{Aeq,16hr}$ and above contours.

There are no objections from officers to the proposal in terms of traffic noise.

Construction Noise

BAL use the following criteria for construction noise, which are derived from guidance in BS5228-1:2009 + A1:2014 '*Code of practice for noise and vibration control on construction and open sites: noise*'. This is an acceptable way of assessing construction noise.

Significance of impact	Daytime noise criteria, $L_{Aeq,12hr}$ dB	Night time noise criteria $L_{Aeq,8hr}$ dB	Effect Level
Negligible	55	45	LOAEL
Minor	60	50	
Significant – Moderate	65	55	SOAEL
Significant – Substantial	75	65	
Significant – Very Substantial	85	75	UAEL

The Environmental Statement says the hours of daytime working would be 07:30 to 18:00 Mondays to Fridays, and 08:00 to 13:00 on Saturdays, with no construction works on Sundays on Bank Holidays. Construction hours will need to be secured in the details of a Construction Environmental Management Plan (CEMP). Officers are satisfied that this can be secured through a planning condition.

Construction noise has been predicted at representative noise sensitive receptors for each construction site of the proposed development. In general, no significant effects from daytime construction noise are expected, apart from works to be carried out on the A38 highway improvements. BAL's results shows that there is one receptor where noise levels would exceed the SOAEL for the A38 highway improvements. It is likely that noise impacts can however be addressed through the development a more detailed noise assessment and mitigation schedule. This can be dealt with through a Construction Environmental Management Plan (CEMP).

There are no predicted significant effects from night time construction works required for the works on the east taxiway link and taxiway widening, which for operational reasons would need to be carried out at night. Controls to reduce noise impacts from these construction works can also be dealt with under a CEMP.

Noise from Multi-Storey Car Park

Some objectors report noise disturbance from vehicle alarms parked in the MSCP has an adverse impact to nearby residents and this will only be made worse by a further MSCP (MSCP3). Since vehicles in the MSCP are not valet parked, BAL does not have the vehicle keys and they cannot override a vehicle's alarm. The MSCP must have openings in its outer walls to allow air flow inside the car park. It was acknowledged at the time the PTI was approved that the sight and sound of vehicles may be perceptible to some, but the impact of this was not expected to be significant. The principle of MSCP3 is acceptable and its design is a reserved matter.

Cumulative Impacts

Cumulative noise levels are shown in the table below and the assessment locations are as follows:

'A' Cooks Bridle Path

'B' Downside Road

'C' Downside Road / Lulsgate Bottom

'D' South of Airport west side of A38

Scenario	Noise Source	Noise Level at Location							
		Day Noise Level dB LAeq,16h				Night Noise Level, dB LAeq,8h			
		A Cooks Bridle Path	B Downside Road	C Downside Road / Lulsgate Bottom	D South of Airport west side of A38	A Cooks Bridle Path	B Downside Road	C Downside Road / Lulsgate Bottom	D South of Airport west side of A38
2017	Air	61	60	62	51	56	54	57	46
	Ground	61	58	52	45	56	52	46	39
	Road	39	62	55	44	33	54	47	38
	Total	64	65	63	53	59	58	57	48
10 mppa (2021)	Air	60	60	62	51	57	56	58	48
	Ground	61	58	52	45	59	54	50	41
	Road	40	63	57	45	34	54	49	39
	Total	64	65	63	53	61	60	59	49
10 mppa (2026)	Air	59	58	60	49	56	55	57	46
	Ground	61	58	52	45	59	54	50	41
	Road	40	63	57	45	34	54	49	39

	Total	63	65	62	52	61	59	58	48
12 mppa (2026)	Air	60	59	61	51	57	56	58	48
	Ground	63	52	52	46	61	47	49	41
	Road	40	63	57	46	34	55	49	39
	Total	65	65	63	53	62	59	59	49

BAL say a change in noise level cannot be greater than the change in noise level for individual sources. Their cumulative noise assessment also shows that the change in noise level at all the assessed receptors is less than 2 dB(A), which would not be considered as significant by the ES if cumulative noise levels were considered. Officers agree with this.

Summary and Conclusions

Mitigating noise from airport development is a multi-layered approach and requires a balanced approach to be taken as set out in Regulation 598-2014. Some of the mitigation in the balanced approach, such as reducing aviation noise at source through quieter aircraft and airspace change, is expected to reduce aviation noise but this will take place outside the planning system.

BAL's noise assessment projections rely on a progressive increase in quieter aircraft operating from BA between 2021 (10 mppa) and 12 mppa (2026). It is considered that the suggested operational restrictions in '*air noise mitigation*' would bring about and incentivise quieter aircraft particularly at night. Subject to these restrictions being imposed and the enhanced noise insulation scheme being secured, it is concluded that there would not be an unacceptable adverse impact arising from the proposed increase in day time flight numbers or the variation of the night time flights caps between British Summer Time (BST) and British Winter Time (BWT).

The impacts of noise from ground-based operations associated to more flights, would increase the frequency of ground noise, but the levels experienced, are, on the whole, likely to be lower at 12 mppa than they would be under the current 10 mppa permission due to the screening effect of the proposed buildings and other proposed mitigations. The reduction of noise at source is welcomed and it is part of the '*balanced*' approach.

The results of the road traffic noise assessment are that there would be no change in the number of receptors affected by road noise between 10mppa baseline and the proposed growth to 12mppa. Noise impacts from construction can be dealt with through a Construction Environmental Management Plan. Cumulative noise impacts are not expected to exceed the optimum noise level from the highest individual noise sources. A combination of planning conditions and planning obligations are an appropriate way to mitigate the projected noise impacts arising from this proposal, and this approach accords with planning policy: both national and local. The approach to mitigation also complies with the balanced approach set out in EU Regulation 598-2014, as well as the relevant policies from the NPSE, APF, PPG and the development plan.

Issue 6: Vibration

Low frequency noise from aircraft has the potential to cause perceptible vibration within dwellings. The noise metric used to assess the likelihood of effects of vibration is the '*maximum C-weighted noise level*' (L_{Cmax}). C-weighting gives more weight to low frequency noise rather than the more commonly used A-weighting, which approximates the average human hearing response to noise in different frequencies.

High sound levels in low frequency sound e.g. below 200 Hz, and especially below approximately 80 Hz, can induce perceptible vibration of lightweight building elements. The impacts of low frequency noise can be exacerbated by resonance effects inside a room. Resonances increase the sound level in parts of the room whilst decreasing it in others. High intensity airborne low frequency aircraft noise can also induce perceptible vibrations in light weight structures and components of structures e.g. window "rattle".

There are no specific policies which relate to vibration from aircraft. However, there is some technical guidance, namely the Historic England document "*Aviation Noise Metric – Research on the Potential Noise Impacts on the Historic Environment by Proposals for Airport Expansion in England*" (2014). This suggests that aircraft 'passbys' that produce a maximum noise level above 97 dB L_{Cmax} are likely to produce an audible rattle of windows. Whilst low frequency noise from aircraft can induce perceptible vibration levels in lightweight structures and loose-fitting components, the levels of vibration are below those at which even minor cosmetic damage would be likely to occur.

Vibration can also occur through the construction phase e.g. from piling works. BS 5228-2:2009+A1: 2014 '*Code of practice for noise and vibration control on construction and open sites*' recommends that certain construction methods can be used to control vibration.

The Noise and Vibration chapter of the ES assesses the effects of vibration from the proposed development on nearby dwellings. The baseline vibration conditions are generally dictated by local road traffic conditions. For dwellings along major roads, there is a potential for perceptible vibration levels to be produced by passing Heavy Goods Vehicles and buses. For dwellings located away from busy roads, vibration levels are likely to be low.

BAL expect that vibration arising from construction in terms of works at the airport and the conveyance of goods is unlikely to change baseline conditions. A Construction Environmental Management Plan (CEMP) can be used however to agree working practices to minimise any adverse construction impacts. Officers agree with this and detailed requirements to reduce potential adverse impacts from vibration can be set out in the CEMP.

BAL's vibration assessment found that in 2017, six dwellings which border Felton Common are exposed to maximum noise levels of 97 dB L_{Cmax} or greater. These noise levels arise from the departure of Airbus A321 and Boeing 737-800 aircraft using the eastern runway. These aircraft combined to result in 4 day-time runway departures on average in 2017. Under the consented 10 mppa in 2021 scenario, this is expected to initially increase to 7 departures, before returning to 4 departures per day under the 12 mppa 2026 scenario. BAL say there are no aircraft types to operate in the future that are louder than those currently operating.

The Historic Environment document suggests that whilst airborne low frequency noise can induce perceptible vibrations in light weight structures and loose-fitting components of structures, the induced levels are typically substantially below levels at which even minor cosmetic damage to buildings and structures may occur. Whilst high levels of low frequency noise may induce perceptible vibration and parallel effects in light weight structures; the resulting vibration levels are likely to be substantially below those caused by persons walking around the building, using stairs and opening and closing doors etc.

It is concluded that the vibration assessment is reasonable and that the proposed development is unlikely to increase the very low numbers of properties adversely affected by noise vibration.

Issue 7: Air Quality

Legislation and policy on air quality in the UK is set out in the following documents:

- *National Planning Policy Framework (2019)*
- *Clean Air Strategy (2019)*
- *Land-use Planning and Development Control: Planning for Air Quality (2017)*
- *Aviation Policy Framework 2013*
- *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)*
- *The 'Air Quality Standards Regulations' 2010*
- *Environment Act (1995)*

The 'Air Quality Standards Regulations' 2010 transposes the requirements of the 2008 Ambient Air Quality Directive (2008/50/EC) and it sets legal limits on concentrations of pollutants. Regulated pollutants in UK law include sulphur dioxide (SO₂), nitrogen dioxide (NO₂), oxides of nitrogen (NO_x), particulate matter smaller than 10µm (PM₁₀), particulate matter smaller than 2.5µm (PM_{2.5}), lead (Pb), benzene (C₆H₆) and carbon monoxide (CO).

The 'Air Quality Strategy for England, Scotland, Wales and Northern Ireland' 2007 provides a framework for improving air quality at a national and local level. It imposes a number of obligations on local authorities to manage air quality but does not directly impose conditions on developers. It also provides health-based criteria for certain air pollutants; these criteria are based on medical and scientific evidence on how and at what concentrations each pollutant affects human health. The Air Quality Objectives (AQOs) derived from these criteria set policy targets which are often expressed as a maximum ambient concentration not to be exceeded: either without exception or with a permitted number of exceedances, over a specified averaging period.

The 'Clean Air Strategy' 2019 sets out the Government's policy on tackling air pollution in England. It aims to reduce public exposure to particulate matter less than 2.5 microns (PM_{2.5}) so that it meets the World Health Organisations (WHO) guideline level of 10µg/m³ by 2025. The strategy also commits to a new target for the reduction of nitrogen deposition. Chapter 5 of the Clean Air Strategy says transport is a significant source of air pollution and the immediate challenge is to reduce nitrogen oxides in the areas where concentrations of these gases currently exceed legal limits. Aviation is considered in the strategy and it cross-refers to the Green Paper, 'Aviation 2050' (2018) which includes consideration of air pollutant emissions from flight and non-flight sources associated with airport operations and surface access.

Part IV of the Environment Act 1995 requires local authorities to review air quality in their area and designate air quality management areas if improvements are necessary. An air quality action plan describing the pollution reduction measures must then be put in place.

The NPPF (para 170e) says planning decisions should prevent new development giving rise to unacceptable levels of air or other environmental pollution, while paragraph 180 says new development must be appropriate for its location in terms of its impact on public health and the natural environment. Paragraph 181 says decisions should comply with: *“national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones”* and local air quality action plans.

Policy CS3 of the Core Strategy (*‘Environmental impacts and flood risk assessment’*) states: *“Development that, on its own or cumulatively, would result in air, water or other environmental pollution or harm to amenity, health or safety will only be permitted if the potential adverse effects would be mitigated to an acceptable level by other control regimes, or by measures included in the proposals, by the imposition of planning conditions or through a planning obligation.”*

The APF seeks to improve international standards to reduce emissions from aircraft and vehicles, and to work with airports and local authorities to improve air quality. It recognises that airports are large generators of surface transport journeys and as such they share a responsibility to minimise the air quality impact of these operations. Around airports, sources of air pollution include aircraft engines, airport related traffic on local roads and surface vehicles at the airport.

The Institute of Air Quality Management (IAQM) and Environmental Protection UK through: *‘Land-use Planning and Development Control: Planning for Air Quality’* (2017) identifies how to classify the magnitude and significance of air quality effects from new development. This promulgates the term *‘air quality assessment level’* (AQAL) and sets limits against which impacts are assessed.

Air Quality Assessment

Chapter 8 of BAL’s Environmental Statement (ES) deals with *‘Air Quality’*. It has been prepared in the context of the above legislation and policy, although it preceded the 2019 *‘Clean Air Strategy’*. Further information was however supplied by BAL in respect of the Clean Air Strategy which has also been taken into account.

The assessment uses dispersion modelling to predict the concentration of air pollutants (nitrogen dioxide (NO₂) oxides of nitrogen (NO_x) and particulate matter (PM₁₀ and PM_{2.5}) and compares them with recorded levels from 2017 and as projected at 10 mppa in 2026 (without development) and 12 mppa (with development). The 2017 levels include measured data from the continuous monitoring station located at Bristol Airport (BA) along with data from diffusion tubes administered by BA and North Somerset Council (NSC), which are presented as annual means.

For human receptors, air quality impacts are projected at 138 locations within a 5km x 3km area of the airport. Appendix 8E of the ES shows the results for every receptor. Separate air quality concentration levels adjacent to main approach roads and junctions were also assessed. This includes the A38 and selected roads (principally Downside Road); A370 and A4174 as well as junctions on the A38 to the south of Bristol.

For biodiversity, 48 different receptors were assessed including sites within:

- Avon Gorge Woodlands
- North Somerset and Mendip Bats SAC
- Mendip Woodlands SAC
- Chew Valley Lake SPA
- Goblin Combe Lake SPA
- King's Wood and Urchin Wood SSSI
- Brockley Hall Stables SSSI
- Felton Common LNR
- Ancient Woodland at Brockley Combe, Garleys Wood, Hyatt's Wood, Oatfield Wood, Lye Wood, Scars Wood, High Wood, Horts Wood, Little Horts Wood, Tuckers Grove and Whitley Coppice, Shippenhays Wood, Presto Wood and Corporation Woods.

The assessment has not considered the impact on air quality from the construction phase, including the production of dust as it notes that this impact would be controlled through a dust management plan required through a Construction Environmental Management Plan (CEMP). The applicant provided an example CEMP, which includes a section on air quality. Officers are content that air quality impacts can be controlled through a CEMP. Access routes for construction traffic will also need to be agreed with NSC as part of the CEMP to ensure these have minimum impacts on background air quality levels.

The main pollutants associated with aircraft and road traffic are particulate matter (PM₁₀ and PM_{2.5}). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, 2007 set out air quality objectives for improving air quality at local and national level.

The air quality objectives for the pollutants of concern for the application, are listed in the table below.

Pollutant	Objective	Concentration measured as
Particles (PM ₁₀)	50 µg m ⁻³ not to be exceeded more than 35 times a year	24 hours mean
	40 µg m ⁻³	annual mean
Particles (PM _{2.5}) Exposure Reduction	25 µg m ⁻³	annual mean
	Target of 15% reduction in concentrations at urban background	
Nitrogen dioxide	200 µg m ⁻³ not to be exceeded more than 18 times a year	1 hour mean
	40 µg m ⁻³	annual mean

Impacts on Human Health

For operational impacts, the report demonstrates that the highest modelled annual mean concentration is $36.9 \mu\text{g m}^{-3}$ at the Forge Motel, opposite the airport entrance. This is below the annual mean air quality objective of $40 \mu\text{g m}^{-3}$ for nitrogen dioxide. The greatest increase in nitrogen dioxide levels from the proposed development is modelled to be $6.7 \mu\text{g m}^{-3}$ at the Airport Tavern. The overall annual mean level at this location will be $34.9 \mu\text{g m}^{-3}$. This is due to the widening of the carriageway bringing traffic closer to the building. For all the receptors assessed, the modelled annual mean concentrations of NO_2 do not exceed the air quality objective of $40 \mu\text{g m}^{-3}$.

With regards to particulate matter (PM_{10} and $\text{PM}_{2.5}$), the report concludes that there are no locations where annual mean limit values of $40 \mu\text{g m}^{-3}$ for PM_{10} and $25 \mu\text{g m}^{-3}$ $\text{PM}_{2.5}$ are exceeded. Hence for all human receptor locations, the projected concentrations of particulate matter will remain below the annual mean air quality objectives. The principal impacts of $\text{PM}_{2.5}$ derive from road traffic, with a small impact from aircraft and on airport activity.

The air quality assessment has identified a number of receptors where annual mean $\text{PM}_{2.5}$ concentrations exceed the WHO guideline value of $10 \mu\text{g m}^{-3}$. These are shown in the table below. Although there are a number of receptors with levels of $\text{PM}_{2.5}$ which exceed the WHO guidelines, the impacts of this is considered to be negligible. All of the receptors assessed the annual mean air quality objective of $25 \mu\text{g m}^{-3}$ is not exceeded.

Receptors with annual mean $\text{PM}_{2.5}$ concentrations over $10 \mu\text{g m}^{-3}$

Receptor	2017	10 mppa	12 mppa
A38 2	10.19	9.85	10.17
A38 3	10.21	9.9	10.22
A38 14	10.43	10.02	9.95
A38 15	10.01	9.59	9.58
A38 18	10.74	10.34	10.06
A38 19	10.78	10.42	10.09
A38 21	10.24	9.94	9.91
A38 22	10.19	9.90	9.92
A38 23	10.23	9.94	9.98

Impact on Ecological Receptors

The Air Pollution Information System (APIS) website provides a comprehensive source of information on air pollution and the effects on habitats and species. Data from APIS has been used to inform the air quality action levels for the ecological assessment.

For all major receptors (SPA's, SAC's Ramsar sites and SSSIs) the predicted concentrations of the annual mean NO_x of $30 \mu\text{g m}^{-3}$ will not be exceeded. For local nature reserve receptors, the maximum predicted concentration is $88 \mu\text{g m}^{-3}$ at the edge of Felton Common adjacent to the A38 carriageway. This exceeds acceptable levels, but this figure already exists due to the immediacy between the A38 road and the receptor, and they are not expected to increase as a result of the proposed development. To put this in to context, concentration levels rapidly reduce further into Felton Common, and are below $30 \mu\text{g m}^{-3}$ at approximately 120 metres from the A38 which is close to background levels.

The table below shows the predicted maximum predicted nitrogen deposition rates at 12 mppa in relation to ecological receptors

Receptor	Air Quality Action Level (kg N ha ⁻¹ y ⁻¹)	Development Contribution (kg N ha ⁻¹ y ⁻¹)	Predicted Deposition Rate (kg N ha ⁻¹ y ⁻¹)
North Somerset & Mendip Bats 1 SAC	10.0	0	39.96
North Somerset & Mendip Bats4 SAC King's Wood and Urchin Wood 1 SSSI	10.0	0.04	32.66
North Somerset & Mendip Bats 5 SAC King's Wood and Urchin Wood 2 SSSI	10.0	0.02	32.64
Felton Common 3 LNR	5.0	0.12	23.36
Felton Common 5 LNR	5.0	0.06	23.30
High Wood AW	10.0	0.18	37.84

Although some values exceed the air quality action levels for nitrogen deposition, BAL contend that the additional impact arising from the proposed development is however insignificant at all receptors. It is therefore concluded that, because the overall background deposition rates are already high and the impact from the proposed development would not be unacceptable.

Conclusion

The method used to establish the air quality results and the number and distribution of the assessment locations provide a realistic projection of the impacts. For human health, there are no predicted exceedances of the annual mean air quality objectives for PM₁₀ and PM_{2.5}. For nitrogen dioxide (NO₂) however all but two receptors locations are expected to incur increase concentrations, but the projected levels remain below the air quality objective. In terms of Local Air Quality Management, all receptors comply with acceptable levels, although some are close to these limits. To ensure this remains the case, ongoing monitoring will be required together with an air quality action plan to improve air quality. This can be secured through a S106 legal agreement.

Issue 8: Surface Access Strategy

Paragraph 103 of the NPPF indicates that '*significant development*' should be sited in locations that are, or can be made sustainable, by limiting the need to travel and by offering a genuine choice of transport modes. It says opportunities to increase sustainable transport will however vary between urban and rural areas, and this should be considered in decision making. Paragraphs 108 and 110 of the NPPF promote opportunities to increase walking, cycling and public transport services, and mitigate adverse impacts on the highway network. Paragraph 111 requires development proposals that generate significant additional traffic to include a travel assessment and a sustainable travel plan to reduce vehicle trips. Paragraph 109 makes clear development should only be refused on highway grounds if its projected impacts are severe and these cannot be mitigated. The NPPF is a material consideration of significant weight.

Policy CS10 of the CS (*'Transportation and Movement'*) expects strategic development proposals to improve the transport network and enable a wide choice of travel modes. Developments should also enhance pedestrian and cycle facilities; deliver better public and rapid transport services and mitigate increased traffic impacts. Policy DM24 of the DMP (*'Safety, traffic and provision of infrastructure'*) has similar objectives. Policies CS23 of the CS and DM50 of the DMP (both apply to *'Bristol Airport'*) says development proposals should improve surface access.

The *'Joint Local Transport Plan 2011-2026'* (JLTP3) and the advanced version of JLTP4, expect proposals for airport growth to deliver an efficient Air Surface Access Strategy (ASAS). Increasing the proportion of people (passengers and staff) travelling to and from BA by public transport (PT) is central to this objective. Staff travel plans should also promote greater use of PT and other sustainable travel, as well as reducing private vehicle use through car sharing. The JLTP is being reviewed and is therefore a material consideration of moderate weight.

Long-term aspirations to improve surface access travel and the transport system up to 2036 is set out in the *'West of England Joint Transport Study'* (JTS) final report 2017, which has informed JLTP4. This shows two alternative strategic proposals to improve travel along the A38 corridor. The first is a new mass transit route between Bristol and BA as part of a wider mass transit network. The second is for major improvements to the A38 between Bristol and Weston-super-Mare including: a new M5 Junction, a new highway link from the M5 to the A38 and improvements on the A38 between Langford and the airport. Growth at BA will contribute to the need for these strategic works, but the catalyst is expected to be major urban growth. The JTS has moderate weight.

The Aviation Policy Framework (APF) 2013 expects surface access proposals to demonstrate how the airport will provide easy and reliable access for passengers; increase access by public transport and minimise congestion. Airport operators are expected to upgrade or enhance transport networks and services to cope with additional demand from proposals, but where there are wider transport objectives, the Government will consider the case for public funding. These objectives are reflected in *'making best use of'*. The APF and *'making best use of'* are a material consideration of significant weight.

BAL's ASAS establishes the following sustainable travel hierarchy:

1. Walking, Cycling and Disabled users
2. Public Transport
3. Ultra-Low Emission Vehicle (ULEV)
4. ULEV taxi use
5. Car sharing
6. Private non ULEV vehicles
7. Private non ULEV taxi
8. Drop off/ lift to the airport (friends and family)

Walking and Cycling

'Issue 10' of this report deals with the range of *'Highway Works'* that are required to mitigate the traffic impacts of the proposal. This comprises improvements to the carriageway and foot/cycle paths near to the airport. The latter will improve pedestrian and cycle access and safety close to the airport, but this is unlikely to have any noticeable impact on increasing the very low number of staff or passengers who walk or cycle to the airport. This is due to the distance between the airport and built-up areas and intervening

topography; the nature of the approach routes leading to the airport; and luggage-laden passengers who are vehicle reliant.

Public Transport

BAL say (para 3.5 of their '*Parking Demand Study*') that the mode by which passengers travel to and from the airport is influenced by numerous factors including the origin of travel; the group size of the travelling party; their age; public transport options, the time of airport departure/arrival, and the price and quantum of airport parking. BAL demonstrate that improvements in PT services in the last decade has seen the percentage of passengers travelling to and from the airport by PT increase from 8% at 5.8 mppa in 2008 to 12.5% at 8.2 mppa in 2017. This averages a 0.5% increase in PT use per annum over that period. BAL derive these figures from ticket information from passengers arriving and departing the airport by public transport. Civil Aviation Authority (CAA) data, which recognises any part of the journey to BA by PT however shows that 17% of passengers travelled to/from BA by PT in 2017. The table below uses the CAA Methodology, and it shows the modal split of passengers travelling to / from BA and some other UK airports. Figures are from 2017.

Airport	MPPA	% travelling by car or taxi	% travelling by public transport	Rail access at or close to the airport
Heathrow	78	60%	40%	Yes
Gatwick	45.5	56%	44%	Yes
Manchester	27.8	81%	19%	Yes
Stansted	25.9	49%	51%	Yes
Luton	15.7	69%	31%	No but served by frequent shuttle bus service
Birmingham	12.9	77%	23%	Yes
Liverpool	4.9	81%	19%	Nearest station is about 3.2km and it is served by regular bus services
Bristol	8.2	83%	17%	No. It is however served by public transport services which originate from or stop at Bristol Temple Meads, Bath Spa and WSM railway stations
Cardiff	1.46	84%	16%	No, but connected shuttle bus transfer service. 10 minutes transfer time
Newcastle	5.3	85%	15%	No, but frequent metro service close to airport

This shows that BA has one of the lower percentages of PT travel compared to other UK airports and it is the lowest % of all UK major airports which provide more than 50,000 flights per annum. Comparison work was undertaken by BAL with some other UK airports of a broadly similar size to BA, including Birmingham, Edinburgh and Glasgow airports, to try and understand why they achieve a higher percentages of PT use. This is useful in comparing passenger travel habits, but the PT mode share at any airport will be influenced by many factors including the mix of inbound/outbound passenger, locality, environment, road and public transport links and mass transit availability.

The Birmingham Airport Masterplan 2018, for example, estimated that approximately 50% of passengers accessed the site via private car in 2016. This does not account for those arriving by taxi. Birmingham Airport provides circa 15,000 parking spaces with 2,000 allocated to staff. BA provides a proportionately much higher level of car parking despite serving at least 3 million fewer passengers per annum. Birmingham Airport is however served by a railway station, which is linked to the airport by a free 'skyrail' service. It is also served by extensive PT services in its wider conurbation and beyond the west midland region.

The CAA data shows that Edinburgh Airport is projected to serve 13 mppa by 2020. It does not have direct rail access, but it is served by extensive bus and tram services, which connect to other transport hubs and which operate every ten minutes. This enabled 27% of passengers to access the airport by PT in 2017. It has less car parking provision than BA, and it proposes to increase PT share up to at least 32% by 2030 through further significant investment.

Glasgow airport was expected to serve 9.1 mppa in 2019. Its 2011 document "*Our Vision Glasgow Airport Draft Masterplan 2011*" sets out the airport's strategy for 2020 and 2040. The section titled 'Surface Access and Transport' has a key objective to "*increase the overall public transport modal share from 11.2% to 15% by 2012*". While no update to this ASAS has occurred, it seems reasonable to assume that more ambitious targets would be applied to any future version should the airport envisage a return to growth.

BA does not have rail or tram access and it is also comparatively distant from the nearest motorway junction. It is however served by bus and coach connections which originate or stop at other public transport hubs including Bristol Temple Meads, Bath and Weston-super-Mare railway stations. BAL report that the highest growth passenger catchment areas for BA in recent years are from South Wales, Devon and Cornwall. These regions are served by PT services to BA, albeit they operate at less frequent intervals than services nearer to BA.

The table below, which extracts data from 'Figure 19' of BAL's '*Parking Demand Study*', compares the percentage and number of passengers from 2017 at 8.2 mppa and those projected at 2026 at 12 mppa from different catchment areas.

Passenger Origin	Passengers at 8.2 mppa in 2017	Projected passengers at 12 mppa in 2026	Trend
Bristol and the former Avon authorities (West of England)	2.31 mppa or 28% of overall passengers	2.87 mppa or 24% of overall passengers	Increase in passengers but lower proportion
South Wales and Cardiff	1.27 mppa or 15%	2.01 mppa or 17%	Increase in passengers and higher proportion
Rest of Wales	250,000 or 3%	380,000 or 3%	Increase in passengers and same proportion
Devon and Cornwall	1.51 mppa or 19%	2.64 mppa or 22%	Increase in passengers and higher proportion
Eastern Corridor - Wilts and adjoining counties	495,000 or 6%	690,000 or 6%	Increase in passengers and same proportion
Glos and Worcs	450,000 or 5%	670,000 or 5%	Increase in passengers and same proportion
South- East corridor incl Dorset	340,000 or 4 %	300,000 or 2%	Reduction in passengers and lower proportion
Others including in bound international passengers	1.6 mppa or 20%	2.32 mppa or 21%	Increase in passengers and higher proportion
Total	8.22 mppa	11.88 mppa	

BAL propose to fund improvements in PT services, with a target agreed to achieve a 2.5% increase in PT use from passengers between 10 and 12 mppa. BAL will, if the application is approved, be required to fund these service improvements as set out below:

- A. The Bristol 'A1' Flyer to be fully integrated into Metrobus within 18 months following consent (subject to Metrobus Board and planning approvals); which would include bus stop upgrades; off bus ticketing; marketing, information and promotional materials, adoption of the Metrobus fares regime; and a review of bus priority measures. Consideration to be given to a Premium Fare metrobus zone for the Airport. A feasibility study to align the A1 with the Metrobus network will be required to be undertaken within 6 months after consent to include (but not limited to):
- branding of vehicles
 - consideration of the fare structure
 - acceptance of metrobus tickets for interim journeys
 - upgraded information across the metrobus network to add Bristol Airport to the network maps
 - provision of off-bus ticketing
 - review of stopping patterns
 - bus stop infrastructure

- B. Once the 'A1' service to the Airport is integrated into the Metrobus network, future public transport improvement funding to develop the connectivity options within the Metrobus network. This could include direct connections to the north fringe of Bristol, including Cribbs interchange, potentially providing a choice of onward connections.
- C. The Weston-super-Mare 'A3' Flyer to become a 24-hour service and routed via Worle station, with appropriate infrastructure improvements, following an infrastructure study to be undertaken by the Airport within 6 months after consent to determine requirements. Delivery within 12 months post consent.
- D. Enhanced frequencies, network coverage and infrastructure facilities on public coach services to the South West (Somerset/ Devon/Cornwall) and South Wales services. A review will be required to be undertaken by the Airport within 6 months following consent to determine the package of measures, which should be implemented within 18 months following consent.
- E. Specific actions targeted to enhance early morning and late-night PT provision for both passengers and staff, related to origins of both and changing to enable public transport options suitable for both flight and shift patterns.
- F. Specific actions targeted ensure current services are developed into viability where this is not currently the case, including through active marketing and promotion.
- G. Development of enhanced bus/rail interchange and joint ticketing schemes.
- H. Continuation and underwriting of all current commitments and conditions from the 10mppa planning consent, including minimum frequencies (as at consent of the 12mppa application). This will require a commitment to ensure the continuation of all strategic bus and coach services that are currently operating, whether they are operated or contracted by the Airport or otherwise. This includes the services currently identified as A1, A2, A3, A4 (Bath), plus the currently named Falcon (to Exeter and Plymouth) and National Express (to Cardiff), and ensures services continue to serve Weston-super-Mare, Bristol, Bath, the South West (Somerset / Devon / Cornwall) and South Wales.
- I. A fixed contribution to schemes supporting 'Mobility as a Service' and Demand Responsive Transport that come forward from the WECA Future Mobility Zone bid, in line with the requirements of the bid.
- J. Delivery of a demand responsive scheduled bus services operating 24/7 via Yatton, Nailsea, Portishead and Clevedon, initially for a minimum of 24 months, with regular reviews. This should be operational within 5 months following consent.

Beyond these initial short term (18-24 months post consent) actions, BAL would be required to make further annual investments in public transport and other transport and highways infrastructure, informed by regular monitoring and review activity via the Transport Steering Group, in order to ensure that the public transport modal share increases. This would include provision of an annual Public Transport Improvement Fund which would be overseen and directed by the Transport Steering Group. A comprehensive public transport strategy should address all key existing and growth markets, seeking to improve marketing, and make service and infrastructure improvements, based on accurate monitoring information and other data such as changing flight schedules. The

effectiveness of the allocation of funding would be required to respond to the annual monitoring information. There would be a clear link between the modal share and the release of further car parking.

The purpose of these service enhancements would be to increase the percentage of passengers travelling to and from BA by public transport from 15% by the time 10 mppa is reached to 17.5% by 12mppa, which is expected to be reached in 2026. For consistency, the increase to 17.5% at 12 mppa is based on a continuation of BAL's PT recording method which differs from that used by CAA. Officers recommended however that future recording should be consistent with the CAA methodology and this will be explained in the planning obligations within the ASAS if planning permission is granted. Furthermore, a short-term PT inputs approach, which describes investments targeted to make a meaningful difference to PT mode share, followed by a more flexible outputs and monitoring approach above a 16% mode share will also be provided. Drop off zone and taxi charges for drop off's outside the terminal will continue to be required. Ringfencing the revenue from this as additional investment in ASAS or Travel Plan measures, will also be required.

It is considered that public transport infrastructure at the airport and visibility to it is vital to its success. To date, BAL has consent, as part of the 10mppa permission, for delivery of a Public Transport Interchange (PTI). The approved location is on the top level of a yet to be built Multi-Storey Car Park 1 (MSCP1). Current projections from BAL indicate that MSCP1 is however unlikely to be built before 10 mppa is reached and it may not come forward for several years after that point.

Despite this, BAL say they remain committed to implementing MSCP1, but are currently exploring options to bring forward the early delivery of an alternative PTI ahead of MSCP1. It is likely be located in close proximity to the terminal building and will provide a passenger experience equal to, or better than, that proposed under the extant consent for 10mppa. Subject to obtaining necessary approvals, BAL currently anticipates that construction of a PTI would commence within 12 months of a 12 mppa permission being granted (to allow for the detailed design of the scheme, procurement of contractors and consultation with NSC) with it being operational within 30 months of a 12 mppa approval. The proposed S106 would secure this. The principle of an alternative PTI is and the timeframe for its provision is reasonable.

BA have set out that the timeframe for completion of the PTI reflects the complex construction programme which comprises development components to be delivered over multiple phases and the need to complete the work within the winter periods, in order to minimise disruption to passengers, and to ensure that there is enough parking to accommodate demand. Construction of the PTI would comprise of the following three phases:

- Phase 1 enabling works (estimated 2 months): Creation of a temporary bridge link from MSCP1 to the terminal to allow passengers to continue to access MSCP1 safely. The current route to the terminal from MSCP1 would be compromised in subsequent phases.
- Phase 2 (estimated 8 months): Construction of the early sections of the new MSCP2, including the expansion of the central core to accommodate 8 lifts, the final bridge link to the terminal and creation of limited additional multi-level car parking (circa 150 spaces). In conjunction with the expansion works to the MSCP the new Express Drop Off car park facility on the MSCP2 site will be constructed to free up

the new site for the PTI. Construction of a new road alignment would be required, including an underpass to create an alternative route to the terminal (segregated from cars) to provide resilience in case the lifts become unavailable for any reason.

- Phase 3 (estimated 8 months): Construction of the new PTI adjacent to the terminal

As part of the surface access strategy, BAL would be required by 2022 to ensure that passengers accessing BAL's on-line car park booking sites, are directed to PT service information. This is so that passengers can make direct comparisons of the cost, time and availability of PT services to the airport from different areas and regions, and book PT tickets at the same time. This will allow passengers to make more informed choices of how they travel to and from BA and increase PT journeys and reduce car travel. This will be required as part of the ASAS.

Some objectors say a 2.5% projected increase in PT use lacks ambition and BAL should be pushed harder by the Council to achieve a 5-10% increase in PT travel from passengers between 10 and 12mppa. Officers consider a growth rate of 5 to 10% up to 12 mppa (by 2026) is not realistic even with the measures outlined above. The reason for this is that delivering a modal share increase is very challenging in a nationally declining bus and coach market, despite localised growth in the West of England bus market and increased demand on some PT services to BA. Some BA passenger catchment areas such as Cornwall, parts of Devon and Wales are also difficult to directly access by PT, and even if PT services are enhanced from the major towns and cities in these areas, access to these hubs is still challenging.

A 2.5% growth over 5 years (2021-2026) is a challenging target, and it will require investment in new services to be front loaded from the outset if planning permission is granted. Provided that this is achieved and a clear timeline for the investment and delivery of new and enhanced PT services is secured in a Section 106 agreement, this is considered an acceptable level of improvement.

While the improvement of PT is the highest sustainable travel priority, there is however a proven need for additional car parking from now and up to 12 mppa being reached. It would be counter-productive to prevent any new additional car parking from coming forward before improved PT services are introduced. A balance will however need to be struck where car parking is realised on a phased basis so that it deals with urgent demands, but not make it too easy to travel by car and prejudice PT use. This is considered further in *'Issue 11: car parking'*.

A failure to deliver public transport mode share Key Performance Indicators (KPIs) would result in a series of remedying actions. Firstly, there would be a comprehensive review of the ASAS (to revise and better target measures). Second, additional funding for public transport measures would be required from BA to provide additional services or enhancements or infrastructure improvement. Last, BA would be required to remove parking spaces from use.

Workplace Travel Plan

A key element of an ASAS is staff travel. BAL propose to update their Workplace Travel Plan with the intention of setting out measures to reduce the number of airport staff who travel to and from BA by private vehicle. A PT modal share target of 30% for all employees is proposed by 12 mppa. This compares with only 7% of airport-based staff travelling to/from BA by PT in 2019. A further 21% travelled by other non-single occupancy vehicle use. These figures are based on BAL's 2019 Staff Travel Survey.

No additional employee car parking is being provided, above the 1,000 spaces currently in place at the south-side of the airport. This is despite BAL's projected 700 full-time equivalent new jobs arising from the proposed growth (refer to '*Issue 3: Socio-Economic Impacts*' for further information).

Some object to the proposal not to provide additional staff parking, including the British Airline Pilots Association (BALPA). They say that not to increase staff parking against 700 new jobs is impractical due to limited public transport options; the origin of staff travel; shift patterns and other factors. BALPA also say that retaining all staff parking at the south of the airport when most staff (circa 60%) travel from the north and work north side, increases travel distances, trip numbers and travel times. They say this is inconvenient to their members and other staff and it is detrimental to sustainable travel.

BAL's decision not to increase staff parking is a positive move but officers consider that reducing the appeal of driving to the airport is one of several step changes that needs to happen if BAL is to achieve a shift in modal share. To succeed, it must however be matched with equally ambitious measures to increase PT services. The proposed improvements in services and frequency would make staff travel by PT more practical, but BAL's travel plan must also have strong incentives for staff to use PT or car share. Ongoing monitoring with measures to bring about further improvements if targets are not being met is also essential. Even with investment in new services and strong management of a workplace travel plan, it will take time to achieve improvements. The details of the workforce travel plan in terms of its funding, timing and specific measures would need to be agreed, and this can be secured through a planning obligation.

A more sustainable parking balance would see some of the 1,000 spaces relocated to the north side of the airport. BAL reject this option and it would mean that car travel, which may be the only practical travel option for some, remains less convenient than it was when staff parking was at the north side of the airport. Notwithstanding this however, the amount and distribution of staff parking at BA is considered reasonable. Reducing the appeal of driving is also a priority, which when combined with better PT services might be the catalyst for some to change to more sustainable travel choices. BAL would be required to review charging for staff parking as a further incentive to bring about a modal shift and this will be required in the Section 106 legal agreement if the application is approved.

Providing for Ultra Low Emission Vehicles and Taxi Contracts

The 2018 DfT publication '*Road to Zero Strategy*' targets a minimum of 50% Electric Vehicle use (EV) by 2030 and the '*Autonomous Vehicle & Electric Vehicle Act*' (2018) explains how the UK should provide for this growing market. It is important therefore that this application provides for and encourages travel from Ultra Low emission vehicles. To date BAL have proposed to install 10 EV charging points as set out in the planning obligations in Appendix 3 although the number, location and type would need to be agreed. For their own vehicle fleet, which includes operational vehicles and shuttle buses, BAL's recently produced a booklet '*Becoming a net zero airport – our roadmap to reduce carbon emissions*'. This indicates that BAL will include electric buses and other ground fleet but does not set a target or timeline. These measures will need to be specified and would need to form part of the CCCAP, which is the subject of a planning condition if the application is approved.

If the BAL taxi contract is re-tendered in the future, the Council would also require a phased transition such that 100% of all taxi provision within the contract are Ultra Low Emission Vehicles (ULEV) by the time 12 mppa is reached. This would be secured within the S106 legal agreement. Should BA decide not to pursue a new taxi contract, then an

ambitious target will need to be agreed with NSC for the percentage of trips to be made to the Airport by EV taxi, relative to travel distances and related to the Airport's new taxi arrangements. The Airport is in a strong position to provide leadership on EV taxi fleet conversion and use and the strategy should be an ambitious plan to support the range of low emission vehicles.

The requirement to address this issue overlaps with BAL's draft '*Carbon and Climate Change Action Plan for growth to 12 mppa*' (CCCAP), which lists these and other actions to enable BAL to achieve carbon neutral growth from 2025. The final details can be resolved as a condition of planning permission, and this will need to be approved by the Council and planned for from the outset by BAL.

Providing for Disabled Users

The airport has a duty to meet all needs under the Equality Act and the Council is also required to have due regard to these groups' needs as a part of their duties under the Equality Act in considering the application.

All modes of transport must be designed on an inclusive basis and not require intervention from others unless requested by a disabled person. Any equipment, such as shelters, kerb heights, audio and visual aids and payment machines must be procured on the basis that they are the most accessible available as well as providing online and/or telephone payment. Parking spaces in terms of their size, location, accessibility to charging points and surfacing must be designed with accessibility in mind. Pedestrian routes must be on direct, preferred desire lines, well-lit and with shallow gradients (1:18 - 1:20) and avoid the use of steps anywhere. Long ramps taking travellers off desire lines should be avoided and lifts should be provided. Surfacing must be smooth with close jointed paving units, where relevant. Any drainage channels must be enclosed and fitted flush with surrounding surfaces installed for any height change over 2 metres. The ASAS will provide detailed information which addresses these requirements.

Monitoring

To ensure that the Airport's Surface Access Strategy and Travel Plan are updated and implemented as necessary, comprehensive monitoring would need to be undertaken. This would be expected to include a wide variety of elements including staff travel surveys, automated traffic counters and mode share monitoring. Details of the frequency and methods will need to be explored and agreed, including adopting annual CAA surveys. This can be secured through as a planning obligation in the Section 106 agreement.

Subject to planning obligations (set out in Appendix 3) and planning conditions (set out in Appendix 4) and to secure the enhanced public transport improvements, workplace travel plan and ULEV strategy, there are no objections from officers to the ASAS, which accords with policy CS10 of the CS, the JLTP and paragraphs 103, 108, 109, 110 and 111 of the NPPF.

Issue 9: Vehicle Trip Numbers and Impacts

The application includes a Transport Assessment (TA), which quantifies the projected volume of additional vehicle trips that would be generated by the proposal and it assesses its impact on the highway network. The TA takes account of different data sources including Civil Aviation Authority passenger surveys 2015; CAA published data 2017; and employee travel surveys 2017. It factors in the projected source and volume of passenger and employee traffic up to 2026 when 12 mppa is expected to be reached. It also

considers forecasted flight schedules and dwell times: the latter being the time between passengers arriving at the airport and flight departure. BAL also examine the expected traffic impacts within the airport, having regard to its physical capacity.

The TA assesses additional traffic levels up to 2026, 'with' and 'without' the proposed development. Projecting future traffic levels includes a growth in background traffic levels estimated using the DfT software program 'TEMPPro'. Traffic forecasts are based on the current understanding of how people make travel choices. Data is provided at the local authority level taking into account expected growth factors derived from historic trends and strategic development. BAL conducted the TA on the basis of 15% PT use at 12 mppa. Officers consider the scope and methodology used to project additional traffic between 10 and 12 mppa is acceptable. However, for the reasons set out in the previous planning issue, a PT mode share of 17.5% target is now required, which should reduce the vehicle trips to BA. The traffic generation levels within the TA, which assumes a 15% PT modal share, are therefore higher than would be expected at 17.5% PT use.

The following tables and bar charts show the projected volume of additional daily passengers and vehicle trips during the peak summer season (August).

Passengers

	August average daily passenger demand	August AM peak total airport passengers (08:00–09:00)	August early afternoon total airport passengers (13:00 – 14:00)	August PM peak total passengers (17:00 – 18:00)
Projected passengers at 10mppa	34,755	611	3,052	2,322
Additional passengers between 10 and 12 mppa	6,951	254	765	358
Total passengers at 12mppa	41,706	864	3,817	2,680

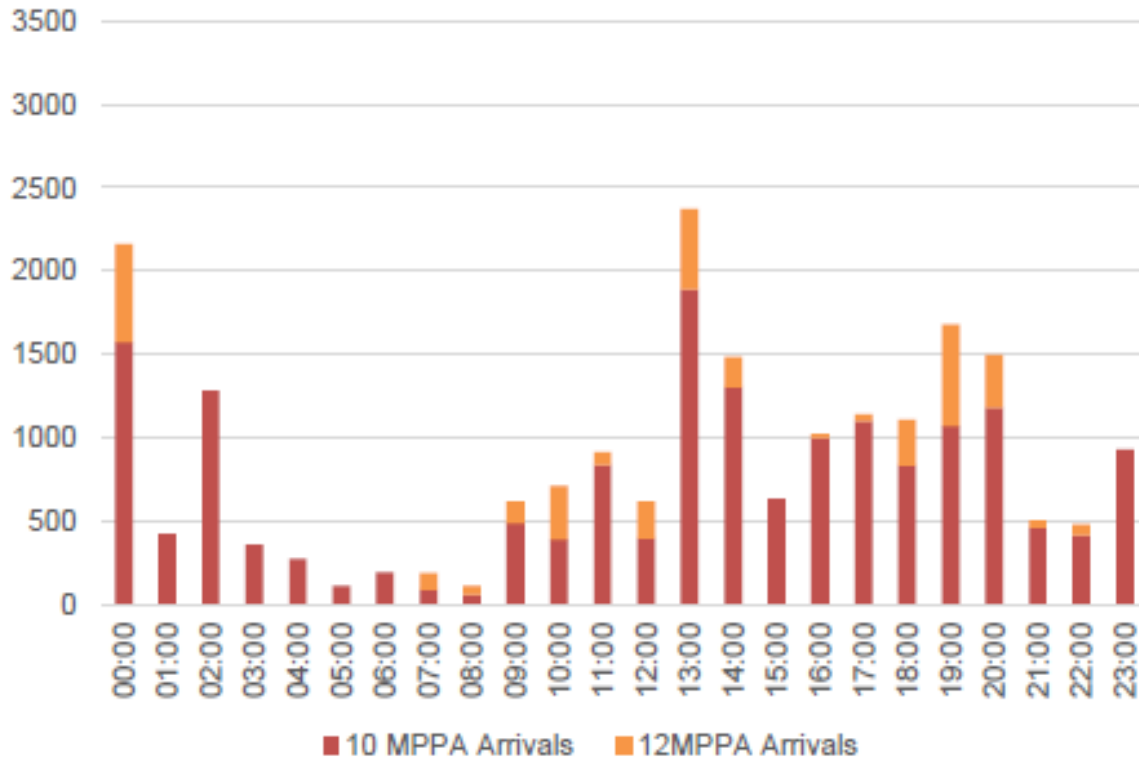
The results show that at 10 mppa (2021) BA is expected to average 34,755 passengers per day, which increase to 41,706 at 12 mppa (2026); a rise of 6,951 passengers (average).

Vehicle Trips

	Additional August daily vehicle trips (two-way)	August AM peak vehicle trips (08:00 – 09:00)		August Airport peak vehicle trips (13:00 – 14:00)		August PM peak vehicle trips (17:00 – 18:00)	
		Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
Additional vehicle trips between 10-12 mppa	5,552	123	75	254	302	161	157

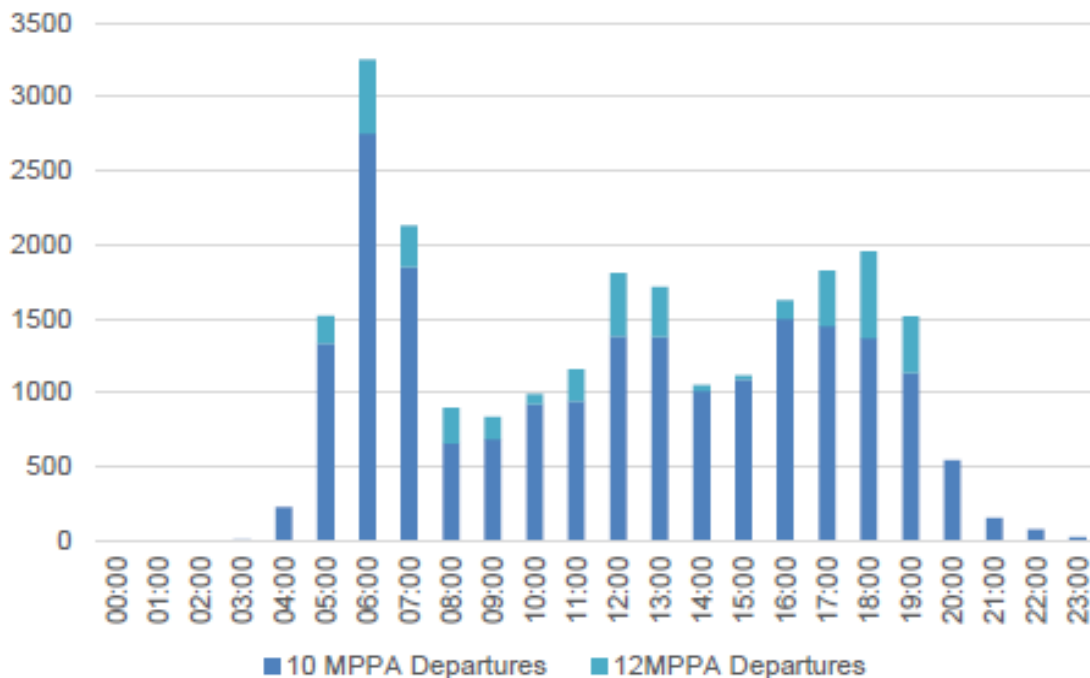
The following bar chart shows the number of passengers exiting the terminal hourly during August.

Figure 8.7: Daily Passenger Exit Terminal (Arrival) Profile in August



Conversely, the bar chart below shows the number of passengers checking in at the terminal hourly during August

Figure 8.8: Daily Passenger Check In (Departure) Profile in August



Highway officers agree with these traffic projections (assuming a 15% modal share of PT). The peak additional periods hours for traffic approaching BA which are: midnight, 10:00, 13:00 and 19:00 hours for traffic exiting BA, and 06:00; 07:00, 12:00, 13:00 and 19:00, are different to morning after afternoon commuter traffic peaks which occur between 08:00 and 09:00 hours and 17:00 until 18:00 hours respectively. The volume of additional airport vehicle trips numbers in the morning peak of 08:00 to 09:00 hours (in and outbound) is 198 with 318 occurring in the evening peak of 17:00 to 18:00 hours.

As part of the consideration of the application, BAL were required to examine projected traffic impacts of the proposal in relation to 13 key road junctions as below:

- Junction 1 A38 roundabout with Bristol Airport northern access
- Junction 2 A38 roundabout with Bristol Airport Silver Zone access
- Junction 3 Downside Road priority junction with Bristol Airport service access
- Junction 4 A38 signal junction with Downside Road
- Junction 4 A38 priority junction with West Lane
- Junction 5 A38 priority junction with Hobbs Land and Barrow Lane
- Junction 6 A38 signal junction with B3130 Barrow Street
- Junction 7 A4171 Colliter's Way (South Bristol Link) roundabout with A38
- Junction 8 A370 roundabout with A4174 (South Bristol Link)
- Junction 9 A370 signal junction with Brockley Coombe Road and Brockley Lane
- Junction 10 A370 signal junction with Station Road & Dark Lane
- Junction 11 A370 signal junction with B3133 Smallway
- Junction 12 A370 signal junction with B3133 High Street
- Junction 13 A38 signal junction with A368

The following table shows the projected added traffic movements for each junction during at AM, PM and airport peak traffic flow times at 2026.

Junction Ref No	Junction Name	Time Period	2026 Reference* Case	Forecast Development Traffic	2026 Test Case**	% Increase
1	A38/Bristol Airport Northern Roundabout	AM	2735	188	2923	7%
		Airport Peak	3181	531	3712	17%
		PM	3512	307	3819	9%
2	A38/Bristol Airport Southern Roundabout	AM	2735	188	2923	7%
		Airport Peak	1776	182	1958	10%
		PM	2082	98	2180	5%
3	Downside Road/Bristol Airport Service Access	AM	785	8	793	1%
		Airport Peak	521	20	541	4%
		PM	664	21	685	3%
4	A38/Downside	AM	2908	154	3062	5%

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	Road	Airport Peak	2915	434	3349	15%
		PM	3497	254	3751	7%
4b	A38/West Lane	AM	2588	143	2731	6%
		Airport Peak	2642	409	3051	15%
		PM	3081	227	3308	7%
5	A38/Barrow Lane	AM	2563	105	2668	4%
		Airport Peak	2344	298	2642	13%
		PM	2881	167	3048	6%
6	A38/Barrow Street	AM	2768	105	2873	4%
		Airport Peak	2432	298	2730	12%
		PM	3002	167	3169	6%
7	A38/A4174 SBL	AM	3807	105	3912	3%
		Airport Peak	3110	298	3408	10%
		PM	3940	167	4107	4%
8	A370/A4174 SBL	AM	3463	54	3517	2%
		Airport Peak	2934	154	3088	5%
		PM	3798	84	3882	2%
9	A370/Brockley Combe Road/Brockley Lane	AM	1770	8	1778	0%
		Airport Peak	1402	20	1422	1.4%
		PM	1951	20	1971	1%
10	A370/Dark Lane/Station Road	AM	1797	0	1797	0%
		Airport Peak	1602	1	1603	0%
		PM	2081	1	2082	0%
11	A370/Smallway	AM	1127	5	1132	0%
		Airport Peak	945	13	958	1%
		PM	1326	15	1341	1%
12	A370/High Street	AM	612	0	612	0%
		Airport Peak	568	0	568	0%
		PM	751	0	751	0%
13	A38/A368	AM	2333	43	2376	2%
		Airport Peak	1890	122	2012	6%
		PM	2413	64	2477	3%

* without the proposed development

** forecast traffic assuming development approved

The results are summarised in the table below.

Junction	Baseline, impact and requirements
A38/main airport (north) entrance	This junction currently operates above its practical capacity in the PM peak, particularly on the A38 north approach. In 2026 at 12mppa the junction operates further above its practical capacity in both the inter peak and PM peaks, with significant queues forecast on the A38 northern approach. Mitigation is required at this junction to ensure it operates within capacity and reduces the forecast queueing.
A38/southern airport access	This junction currently operates within its capacity and it is forecast to continue to do so at 12mppa. No mitigation is required at this junction
Downside Road/airport service access	This junction currently operates within its capacity and it is forecast to continue to do so at 12mppa. No mitigation is required at this junction
	This junction currently operates above its practical capacity in the PM peak, particularly on the A38 north. In 2026 at 12mppa the junction will operate further above its practical capacity, particularly in the PM peak with significant queues forecast. Mitigation is required at this junction to ensure it operates within capacity and to reduce significant queueing.
A38 / West Lane	This junction currently operates within its capacity in all modelled periods in the 2018 baseline. In 2026 at 12 mppa, the junction is forecast to operate significantly over capacity in all three modelled peak periods. Mitigation is required at this junction to ensure it operates within capacity.
A38 / Barrow Street	This junction currently operates within its capacity in all modelled periods in the 2018 baseline. In 2026 at 12 mppa the junction is expected to operate slightly above capacity in the Inter peak and PM peak scenarios. Mitigation is required and the details of this is considered in ' <i>Issue 9: Highway Works</i> '
A38 / Barrow Lane	This junction operates slightly above capacity in the 2018 baseline PM peak period. With additional of growth up to the 10 mppa baseline the junction is expected to operate over its capacity in all three modelled periods, with some queueing likely. In 2026 at 12 mppa further queueing is expected, although platooning of traffic on the A38 would result in additional gaps for Barrow Lane traffic to make use of. On balance, no mitigation of this junction is necessary.
A38 / A368 Churchill Crossroads	This junction is currently operating at its operational capacity, but the modelling results project that the extra impacts arising from this proposal is insignificant. A further monitoring report will however be required and if this proves that the impact of additional airport traffic operates beyond its capacity to the detriment of road traffic management, (the trigger and details of this will need to be agreed with the LPA) measures are proposed and agreed in writing by NSC and then implemented to an agreed timetable at the cost of BAL.
Modelling of the A370/South Bristol Link	Officers conclude that an assessment of this junction should be undertaken to establish whether highway mitigation is necessary. BAL dispute that mitigation is required for this junction, but they do

(SBL) road	however commit to a fixed contribution of £100,000 to enable a feasibility study that is to be scoped by NSC and undertaken post consent. This would be used to program data collection microsimulation Highways Network model to test scheme options and then test the preferred scheme. If this work demonstrated that highway mitigation work is necessary, the Council would seek funding from the DfT as this is a site with multiple influencing factors, the Airport only being one.
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The projected impact of additional airport traffic growth on the following junctions is considered to be too low to require any further assessment/mitigation.

A370 / Brockley Combe Road/ Brockley Lane	The impact of the proposed expansion on this junction was forecast to be one vehicle every three minutes and that this level of impact would be well within daily variation. This level of impact would not require further assessment.
A370 / Dark Lane / Station Road	The impact of the proposed expansion on this junction was forecast to be one vehicle an hour and that this level of impact would be well within daily variation. Officers agree that this level of impact would not require further assessment.
A370 / Smallway, Congresbury	The impact of the proposed expansion on this junction was forecast to be one vehicle every four minutes and that this level of impact would be well within daily variation. Officers agreed that this level of impact would not require further assessment.
A370 / High Street, Congresbury	There was no forecast impact as a result of the proposed expansion on this junction. As such officers agreed no assessment was required.

BA has a vehicle access on to Downside Road, which is restricted to use by operational and emergency vehicles only by a condition in a previous planning permission. Some representations say that this access should be opened to passengers, as it may help to reduce the traffic volumes passing through the Downside Road junction, which becomes congested at times. Highway officers consider the proposed improvements to the A38/Downside Road junction should reduce congestion at this junction without opening up the operational access to other traffic.

In addition to the above, Highways England, Bristol City Council and Bath and North East Somerset (BANES) Council have examined the implications of the application on their highway network.

Highways England (HE) indicate that following assessments of the impact of traffic growth at M5 junctions 18 to 22 inclusive, the effects on junctions 18-21 are acceptable, but improvements are needed for Junction 22/A38 before BA reaches 11 mppa. This will require BAL to secure agreement for a detailed highway scheme and fully fund these works. This can be secured through a planning condition or S106 agreement.

BANES considered that whilst some areas of impact of the application on their network had been understood, mitigation measures have not been agreed. BANES have requested that if planning permission is agreed the following planning obligations, within a S106 Legal Agreement, should be required.

1) Strategic mitigation,

- 2) Links to the draft Chew Valley Transport Strategy
- 3) Measures secured to ensure that uncontrolled growth in parking numbers is not an unintended consequence of any planning permission.

In response to point 2, it is agreed that a Monitor and Manage approach for the Chew Valley B3130 corridor is required and that where measures are proposed they are to be agreed in writing by NSC and BANES and then implemented to an agreed timetable at the cost of BAL. For the third point, it is considered that the approach to limit and phase additional car parking as proposed by BAL, together with increased enforcement (see '*Issue 11; Car Parking*'), would reduce the incidence of unauthorised off-site car parking.

Bristol City Council expressed concerns about the modelling of the South Bristol Link/A370 roundabout, and specifically how the queue lengths there have been recorded. The comments in the table above deal with this matter.

An objector contends that Bristol City Council's (BCC) intention to introduce a 'Clean Air Zone' (CAZ) in 2021 will cause some passengers to re-route airport journeys in to North Somerset as opposed to Bristol. They contend that this should have been factored in to the TA. In response, officers note that BCC carried out a technical analysis of a number of options to develop an outline business case for the CAZ. These will now be used to prepare a full business case for submission during this year which will involve engagement with all businesses and residents affected to help manage implementation, including details of mitigations measures and exemptions. Detailed plans are yet to emerge however, and the potential impact on traffic distribution (and air quality) is unknown. It is not therefore sufficiently advanced to warrant a reassessment of the BAL's TA or Air Quality Assessment.

Overall, it is therefore concluded that the proposed development would not have an unacceptable effect in terms of vehicle trip numbers and impacts, subject to the mitigation outlined above. This accords with policy CS10 of the CS and DM24 of the DMP.

Issue 10: Highway Works

To mitigate the projected traffic impacts arising from the proposed development outlined above, the application proposes to widen the A38 carriageway and foot/cycle way for approximately 520 metres running north from the main airport roundabout access to a point about 130m north of the West Lane junction. This would be achieved by BAL using land on the west side of A38 including two dwellings ('High Lands' and 'Greenacre'), a former quarry adjoining the junction with Downside Road, part of land at the Airport Tavern and adjoining land to the north. The proposed works will require the removal of some trees and other vegetation and boundary walls/fences at these properties. The landscape and visual impacts of this are considered in Issue 13 of this report.

The widened carriageway is required to allow two through traffic lanes in each direction. It is proposed to provide a three lane north bound flow over two short lengths where (1) a dedicated left turn lane is proposed into Downside Road and (2) a dedicated right turn lane is proposed into West Lane. The main roundabout exit from BA will have a dedicated left lane exit on to the A38.

The junction with Downside Road would remain controlled by traffic signals linked to new signal controls at the West Lane junction. The signals would use *Microprocessor Optimised Vehicle Actuation* (MOVA) to enhance traffic flow and reduce queuing. It is proposed that traffic will only be able to turn left out of West Lane on to the A38 and

motorists travelling southbound will remain unable to turn right into Downside Road. Motorists wanting to turn into Downside road from the north would continue to 'U-turn' at the main airport junction with the A38 and then exit left at the revised junction with Downside Road.

The proposed works at Downside Road involve widening a section of Downside Road to provide 2 lanes for traffic approaching the A38. This should reduce queue lengths on Downside Road. The vehicle access to the Airport Tavern would be relocated from the A38 to Downside Road, with a short right turn lane provided.

The existing footway/cycle track will remain on the eastern side of the A38, with a new footway provided north of the West Lane junction. An improved footway/cycle track is proposed on the western side of the road between the airport and Downside Road, with a footway provided for the section north of the Downside road tying in with the existing facility north of West Lane. Pedestrian and cycle facilities are proposed to be provided within the Downside Road junction and the design will incorporate drop kerbs. Bus stops will be retained albeit adjusted for the new alignment. Access will also be maintained to the footpath which runs along the western boundary of the Airport Tavern land towards 'Lulsgate Bottom'. The proposed improvements to the foot and cycle paths will be linked in with improved road traffic-controlled crossing points.

At this time, it is expected that NSC would carry out the highway works at BAL's expense as soon as is practical. If, however, for any reason the BAL's proposed highway works are not commenced within 3 years post-consent, then its delivery would revert to a 'Section 278' process in which BAL would be responsible for carrying out the highway works to the Council's satisfaction. These scenarios, including the transfer of funds, are set out in the proposed Section 106 legal agreement.

It is considered that these works would improve traffic flow and safety in the immediate vicinity of the airport and are proportionate mitigation in relation to the projected impacts arising from the proposed development. The detailed drawings submitted with the application showing the proposed highway works are acceptable, although some final specifications will need to be agreed before works can commence. This can be controlled by planning condition.

To accommodate vehicle movements and improve flows within BA and onto the A38, a two lane, one-way system, gyratory road is proposed within the airport perimeter. This will provide additional capacity onto North Side Road and a connection between the A38 and the northern components of the airport, including the main terminal building, multi-storey car park and surface car parking areas. To the west, the gyratory road serves the airport servicing area and hotel. Within the gyratory, replacement car parking is proposed for approximately 360 vehicles, with a lay-by for buses to collect users and transport them to the terminal building. The new circular route will be constructed in a series of phases to ensure vehicle circulation throughout the works are managed to minimise congestion. These works are considered acceptable and would improve traffic flow within the airport.

Highway mitigation works will be needed at the A38/Barrow Street junction, given the impact of the proposed development on Barrow Street, particularly in the AM peak. Mitigation could simply take the form of adjustment to signal timings or providing additional physical capacity for the Barrow Street approach. If no physical changes are required, mitigation should be implemented when 10 mppa is reached. If physical works are required, phasing arrangements for the delivery of these works will be required. BAL would fully fund any such works.

At the A370/SBL junction the applicant disputes that mitigation is required but will be required immediately following consent (if granted) to make a fixed sum contribution to a feasibility study that is to be scoped and undertaken by NSC post consent, as set out in the earlier table.

Some objectors say that there is no explanation of the costs to the public of the proposed road improvements. Furthermore, these junction improvements simply allow the network to flow a little better immediately near to the airport, but it is a temporary fix and high congestion levels along the A38 network will re-occur before 12 mppa is reached. On the first point, the highway works (the design, implementation and administrative and legal costs) must be wholly funded by BAL. On the second point, officers consider the proposed highway works will provide an acceptable solution up to 12 mppa. Longer-term transport improvements along the A38 corridor will be considered in tandem with future strategic housing growth allocations and this would look at wider capacity issues that are needed and improved sustainable travel options.

In summary, the proposed highways works are considered to be proportionate to the added traffic impacts arising from the proposed development. This is acceptable under policy CS10 of the CS and DM24 of the DMP.

Issue 11: Vehicle Parking

Whilst the level of public transport use is planned, as part of the application, to increase to a target of at least 17.5%, the majority of passengers would continue to travel to the airport by car. Not all passengers require long-stay parking however, as approximately 27% of passengers are dropped off and collected by family or friends using short-stay car parking (CAA data 2017). A further 12% of passengers travel to and from BA by private taxi (CAA data 2017).

BAL's '*Parking Demand Study*' (PDS) says it had circa 16,700 passenger parking spaces at the airport in 2018 (this excludes circa 1,000 staff parking spaces), which were distributed as below:

- Meet & Greet car park near the passenger terminal (900 spaces).
- Premier/Short Stay car park – the first 3 levels of the Phase 1 multi-storey car park (522 spaces) near to the passenger terminal.
- Long Stay car parking a short walk from the terminal (3,508 spaces), and
- Long stay 'Silver Zone' parking at the south of the airport site (11,770 spaces). This includes a seasonal car park which can currently only be used between May-October each year. Passengers who use the 'Silver Zone' car parks are transferred between the Silver Zone and terminal by a shuttle bus service.

The top two levels of the Phase 1 multi-storey car park (Phase 1a) were completed after the PDS was prepared and some adjustments were made to other on-site car parks in 2019. The net result is that BA's current parking capacity is circa 17,100 spaces. The passenger drop-off arrangements have also been altered since then but this has no material impact on the on-site parking numbers.

BAL say that most car parks reached their operational capacity (defined as 95% full) in the 2018 summer peaks. During the same period however at least a further 3,500 vehicles were estimated to be parked near the airport in unofficial off-site car parks largely in the Green Belt. A 2019 count, based on photographs taken from a helicopter survey, estimated the level of unofficial car parks has increased to at least 3,900 spaces. This

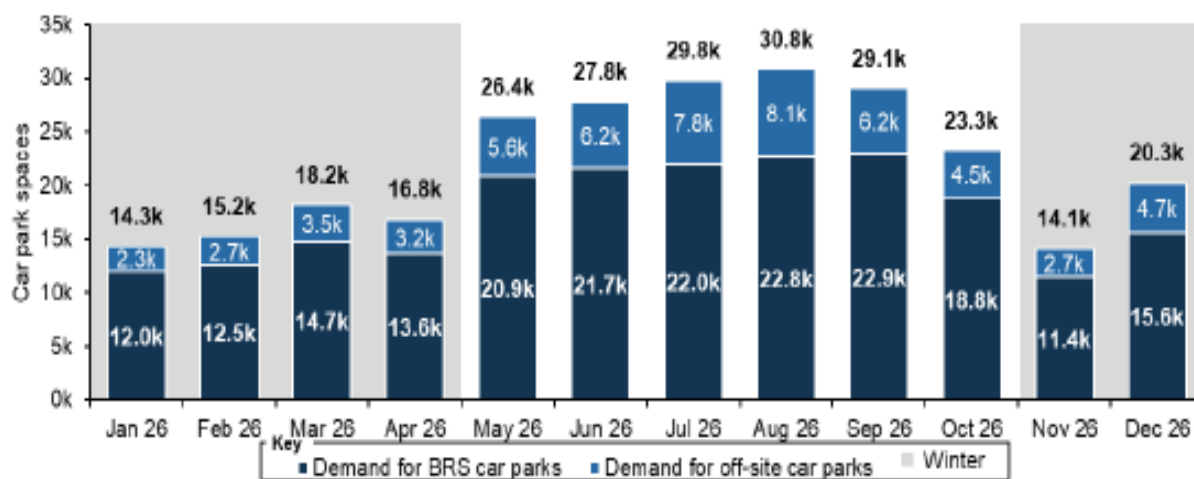
estimate was focussed on car parks clustered near to BA, and there may be others further from BA not accounted for.

Off-airport parking demand generally arises because (1) public transport is difficult to access from the origin of some journeys; (2) some passengers choose not to use public transport even though it may be available; (3) the total parking demand exceeds the supply at official car parks at certain peak times; and (4) off-site operators advertise their car parks and undercut BAL's parking tariffs. The impact of point (4) is that even when there is spare capacity at authorised airport car parks during the quieter months, such as November, January and February, substantial parking still takes place at unofficial, off-airport sites.

BAL project that the peak summer parking demand in 2019 was expected to increase to circa 23,400 spaces at its highest point, with further growth expected in the 2020 and 2021 summer peaks in the run up to 10 mppa being reached.

The table below from BAL's addendum to its Parking Demand Study shows the projected month-by-month peak parking demand at 12 mppa in 2026.

Figure 8b – Forecast size of off-site demand above peak monthly demand, 2026



The projected overall passenger parking demand (that which is expected to take place at all car parks: BA's car parks and other car parks assuming 15% PT) ranges from 14,100 vehicles at the quietest time of the year (November 2026) up to 30,800 vehicles in the summer peak (August 2026). It should be noted however that these projections assume only 15% PT use by 12 mppa rather than the 17.5% required by the Council.

BAL project that passenger growth between 2018 (8.65 mppa) and 2026 (12mppa) would generate a need for approximately 3,900 additional parking spaces (again assuming only 15% PT use). This is in addition to BAL's ability to increase its own parking supply at the airport to circa 18,700 by implementing outstanding elements of the 10 mppa (notably MSCP1). The 10 mppa permission does not require MSCP1 to be built by a certain point in time (refer to Issue 12 for further details), although BAL say they intend to build it between 10 and 12mppa.

Officers, assisted by independent consultants, consider that the methodology used by BAL to establish the increased parking demand is robust, albeit with the use of a 15% public transport uptake potentially providing a degree of over-estimation. This includes an

estimated growth of inbound non-UK resident passengers from 19.5% in 2017 to 21.2% in 2026, which, in itself, will suppress parking demand. Growth from 10 to 12 mppa also includes a greater number (and higher proportion) of passengers from BA's wider catchments areas of Devon, Cornwall and South Wales.

At 17.5% PT use, officers consider the number of parking spaces needed up to 12 mppa would reduce to approximately 3,200 spaces. BAL disagrees and contends there is a proven need for a net increase of 3,900 spaces which BAL propose to provide entirely at the airport. This comprises a Phase 3 MSCP (2150 spaces) on the north side (in the "Green Belt Inset" – see below) and 2,700 additional spaces as an extension to the 'Silver Zone' car park on the south side. While this totals 4,850 additional spaces gross, the net increase is 3,900 spaces as extensive surface parking is lost to construct the MSCP and the nearby gyratory road in the current north side car parks.

To ensure that the increased use of public transport is incentivised, it is proposed that planning controls be used to limit the initial number of additional car parking available at the airport to 3,200 spaces. The application still includes a proposed 3,900 additional spaces, therefore 700 spaces would be prevented from being used through planning controls until such time that a future parking review demonstrates to the satisfaction of the LPA that there is a proven need for these additional spaces. This would expect the increase to 17.5% public transport to have been achieved.

If BAL delivered the full 3,900 additional spaces, this would result in approximately 22,600 spaces overall at the airport. This would exceed the highest projected peak winter parking demand at 12 mppa in 2026, but BAL say they expect to capture no more than 76-83% of the total parking demand. This assumes competition from cheaper unofficial car parks. They suggest that this may result in up to 4,700 vehicles being parked off site at peak winter time during the peak Christmas period at 12 mppa. During the summer peak, BAL expect the passengers parking demand to range from 26,400 spaces (May 2026) up to 30,800 spaces (August 2026). During this period, BAL expect to capture between 73 and 81% of the market demand. BAL estimate this could result in up to 8,100 being unable to park at the airport in the peak summer period.

The volume of parking demand is clearly affected by the level of unofficial car parks and their pricing strategy, which encourage passengers to drive from source, rather than use public transport. If enforcement action against unofficial car parks which are unauthorised was successful and PT services are also improved, it may persuade some passengers to make more sustainable travel choices. This will take time to achieve however.

BAL suggest that unless further official planned car parking is delivered as an early phase of development, then the growing demand for surface parking from passengers will be met by unauthorised car parking in the Green Belt. It is accepted that this is one possible risk but providing further authorised parking at BA without regard to its pricing structure is also likely to increase the market demand for cheaper off-site parking.

BAL says it does not control or have influence over charging for off-site parking, taxis and the majority of public transport services and their ability to develop and implement a holistic charging strategy is significantly restricted. Even so, it is considered that a review of parking charges in relation to public transport tariffs and drop-off charges is essential. Parking charges at the airport should also be structured to make travel by public transport a more appealing option. A multi-modal pricing review would therefore be required as part of an updated Air Surface Access Strategy (ASAS).

BAL contend that a year-round use of the seasonal car park and the additional surface parking is needed immediately if the application is granted. However, it is recommended that this should only be supported, if substantial funding for new or enhanced PT services is also in place from the outset. The timing and phasing arrangements will need to be agreed as part of a S106 agreement.

Unofficial airport car parks and other parking and waiting arrangements

The scale of unauthorised and unofficial off-airport car parking remains a significant planning issue. The Council has been successful in defending planning appeals for unauthorised airport car parking and closing down a number of unauthorised car parks, but it is an ongoing and resource-intensive problem. Typically, the closure of one unauthorised site, often results in another car park sites being set up nearby. Targeted enforcement measures and resources are being secured to deal with this problem more effectively.

Short-term parking and waiting also occurs at the roadside, in lay-bys and other locations near to the airport, often to the detriment of local communities affected by it. During pre-application consultation, local parish councils, stakeholders and the public raised concerns at a “Parking Summit” organised jointly by the Council and airport about the impact of taxis and other vehicles waiting offsite in readiness to pick-up arriving passengers.

At present, short-stay parking at BA enables passengers to be dropped-off or picked-up near to the passenger terminal. Express Drop Off charges have recently been raised to £3 for 10 minutes with the charge increasing exponentially after that. To help to reduce taxi waiting near to the airport BAL, in response to the local community’s concerns, has recently also installed a taxi waiting and drop-off area within the ‘Silver Zone’ parking area with associated cabin and toilet facilities with 39 spaces.

As a further response, BAL propose, as part of the current application, to contribute towards parking enforcement resources and on-street parking controls to prevent or reduce off-site vehicle parking and waiting. This would enable the Council to:

- (a) Review parking restrictions in laybys and main roads;
- (b) Review parking in surrounding roads, lanes, cul-de-sacs and driveways;
- (c) Implement Traffic Regulation Orders (as required); and
- (d) Address unauthorised green field parking.

Any proposed Traffic Regulation Orders (TRO’s) to control on-street parking or waiting will however require separate approval from the Council. This is a separate process to the planning application.

In summary, it is therefore considered that the proposed level of on-site car parking at the airport is the minimum required to meet the needs arising from the proposed increase in passenger numbers after the level of public transport use has increased. The further controls and mitigations set out above are necessary to ensure the impact of the proposals are appropriately mitigated. The recommended planning obligations (Appendix 3) and planning conditions include public transport and parking requirements, should the application be granted. Subject to these, the impact of the additional parking requirement is considered acceptable.

Issue 12: Green Belt

BA is in the Green Belt, except for 44 hectares at its north side. This is known as the 'Green Belt Inset' (GBI), which includes the passenger terminal, hotel, multi-storey and surface car parks, air traffic control tower and other operational buildings. Policy DM50 of the DMP (*Bristol Airport*) supports airport development in the GBI subject to the consideration of its environmental impacts.

Proposed airport development in the Green Belt outside the GBI is subject to Policies CS6 of the CS (*North Somerset's Green Belt*) and DM12 of the DMP (*Development within the Green Belt*) as well as Section 13 of the NPPF (*Protecting Green Belt land*). CS6 has the same objective as paragraph 133 of the NPPF, which is to prevent urban sprawl by keeping Green Belt land permanently open. It also says: *"the essential characteristics of Green Belts are their openness and their permanence"*. Paragraph 134 of the NPPF lists the five purposes of the Green Belt. The most relevant to this application is clause 'C' which is: *to assist in safeguarding the countryside from encroachment*.

DM12 and Section 13 of the NPPF set out what is not "inappropriate development" in the Green Belt, the scope of which is set out in paragraphs 145-146. Some forms of development are considered not to be "inappropriate". This includes:

- *engineering operations and material changes in the use of land provided they preserve the openness of the Green Belt or do not conflict with the purposes of including land within it;*
- *Local transport infrastructure which can demonstrate a requirement for a Green Belt location*

Paragraph 143 of the NPPF says *'inappropriate development'* is, by definition: *"harmful to the Green Belt and should not be approved except in very special circumstances"*.

Paragraph 144 says: *"Very special circumstances will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations."*

Green Belt policies in the development plan and NPPF are a material consideration of significant weight.

Need for development in the Green Belt

BAL says that it has maximised the amount of proposed development that it can provide in the GBI. For operational reasons however, the following elements are proposed in the Green Belt:

- A new eastern aircraft taxiway link and taxiway widening (and fillets) to the southern edge of Taxiway 'GOLF';
- Improvements to (widening of) the A38 highway between the main airport access and West Lane to the north.
- Year-round use of the 3650-space seasonal car park (7.8 hectares site). This car park is currently restricted to use from May to October each year.
- An extension to the Silver Zone car park to provide 2700 spaces (5.4 hectares site)

BA's airfield, including the runway and aircraft taxiways, is in the Green Belt. BAL say alterations to the taxiway link is needed to improve access to the runway and provide a more efficient taxiway system for aircraft awaiting departure. It is agreed that these works can only be in the Green Belt. This work is an '*engineering operation*' and it will be carried out at or very near to existing ground levels. Officers consider the physical works would not harm the openness of the Green Belt. They would result in a slightly enlarged surface area in the airfield where aircraft movement will take place, but its impact on the openness of the Green Belt is very low and it does not conflict with the purposes of including land in the Green Belt. It is appropriate development in the Green Belt.

The proposed highway works are, for the reasons set out in the '*Issue 10: Highway Works*', required to mitigate the localised impacts of increased traffic arising from this proposal. These works can only be in the Green Belt. They are likely to be at surface levels and would not harm the openness of the Green Belt. Since the proposed highway works are largely on developed land, it is not encroachment in to the countryside and does not conflict with the purposes of including land in the Green Belt. The proposed highway works are appropriate development in the Green Belt.

The proposed year-round use of the seasonal car park (3,650 spaces) is a change in use of land (outside the current seasonal restrictions), and the extension to the 'Silver Zone' car park (2,700) is a change of use of land and engineering operation. These proposals would harm the openness of the Green Belt and conflict with the purposes of including land in the Green Belt. It means they are inappropriate development in the Green Belt. BAL acknowledge this but say there is a proven need for additional car parking. They contend that there are 'very special circumstances' for these proposed developments being in the Green Belt, which they argue clearly outweighs any harm to the Green Belt.

The need for the additional car parking is addressed in the previous section of this report and found to be justified.

Scope for further parking in the 'GBI'

Objectors say that if BAL can find space in the GBI for terminal extensions, passenger walkways and a third multi-storey car park, they should also be able to find space for further parking and the priority should be more MSCP's, instead of surface parking in the Green Belt. Other objectors say that no further car parking should be allowed at or near to BA, as the airport and its surroundings already suffer adverse environmental impacts from excessive traffic, noise and poor air quality and encouraging further vehicles to drive to and park at the airport would make matters worse.

On the first point, it is noted that all proposed development in the GBI, apart from MSCP3, is 'airside', which means it is located in areas of the airport that are only accessible once passengers have passed through security controls. For security and safety reasons 'airside' land is not appropriate for passenger car parking. There is no surplus space in the GBI for further surface car parking. The only way therefore to increase car parking capacity in the GBI is multi-storey parking, which is the subject of the proposed MSCP3.

On the second point, the GBI was designated to accommodate intensive airport development to facilitate its growth, and to reduce the pressure for airport development in the Green Belt. The principle of MSCP3 in the GBI is therefore acceptable subject to consideration of its environmental impacts. These are assessed in Issues 5 (Noise); 7 (Air Quality); 8 (Surface Access Strategy); 9 (Vehicle Trip Numbers and Impacts); 13 (Landscape and Visual Impacts) and 19 (Other impacts on residents) respectively.

BAL's main reason for discounting further MSCP's (beyond MSCP3) is that they do not consider there is a business case for it. Referring to their '*Parking Strategy*' and '*Parking Demand Study*', they say that passenger demands for premium rate parking is substantially less than it is for lower tariff surface parking and over-providing MSCP's does not make commercial sense.

The Council weighed-up a similar issue in 2016 when considering two planning applications to revise the phasing of the 10 mppa planning permission. The first application (ref number 16/P/1455/F) sought to release MSCP1 from being operational by the time the first phase of the seasonal Green Belt car park commenced use. The second application (ref no. 16/P/1486/F) would enable BAL to operate phase 1 and 2 of the Green Belt surface car park before 9 mppa was reached, albeit still retaining the seasonal restrictions. Both applications were approved by the Council and the seasonal Green Belt car park (3,650 spaces) opened in 2016.

The reasons why the Council approved these applications was that it considered BAL had demonstrated that there was a significant and immediate need for further lower priced parking, and this could only be provided outside the Green Belt inset. The Council concluded that the commercial case underpinning those applications was a material consideration of significant weight, and it constituted '*very special circumstances*', so far as early delivery of parking was concerned. The Council concluded the '*very special circumstances*' clearly outweighed any harm to the Green Belt by reason of inappropriateness, and any other harm.

The approval of those applications and the weight given by the Council to the economic case over Green Belt harm was challenged by an application for a Judicial Review ('*Parking Operations Against Monopolies Limited versus North Somerset Council*'). Permission to proceed to a judicial review was refused in 2017 with the judge saying: "*In concluding that there were very special circumstances... the Council was entitled to take into account the different economic trends and requirements then shown*". The judge indicated that commercial issues are a material consideration and the weight given to it is a judgment for the decision maker.

Paragraph 80 of the NPPF (2019) says: "*Significant weight should be placed on the need to support economic growth and local business needs*". BAL's contention that there is an over-riding customer demand for surface car parking is backed-up with supporting evidence in their '*Parking Strategy*' and '*Parking Demand Study*'. This shows that there is a much greater and more urgent need for further surface parking. Some objectors say BAL should offset the cost of building more MSCP's against other elements of the business. It is unrealistic however to suppose that a business would front load expensive infrastructure (such as MSCP's) before a business case for it has been reached.

Some objectors say that no further car parking should be permitted in the Green Belt until BAL has implemented MSCP2 approved under the 10mppa permission. Other objectors say not building MSCP2 would increase pressure for further surface parking in the Green Belt beyond the 2,700 additional spaces in this application. The latter is considered unlikely to arise however since MSCP's are a premium priced product which appeals to a small proportion of passengers and this is greatly outweighed by the demand for lower-cost surface parking.

While the 2016 planning permission released BAL from implementing either of the two MSCP's in the 10 mppa permission by a deadline, BAL built 'MSCP2' in two stages, with

final completion in 2019. MSCP1 (which includes the approved roof top public transport interchange) is however yet to commence. BAL say MSCP1 and MSCP3 would be built during the 10 to 12 mppa growth period when there is a business case for it, although they do not commit to when this might be. In the meantime, the airport is exploring alternative locations for the PTI which it is considered, should be built and operational by BAL an agreed deadline. This is addressed in issues 8 and 11 of this report and Appendix 3.

In summary, it is considered that BAL has demonstrated that the additional surface car parking (2,700 spaces) and year-round use of the current seasonal car park (3,650 spaces) cannot be delivered in the GBI. This does not mean that it should be allowed in the Green Belt. BAL recognise this, and their sequential search investigates Park & Ride (P&R) options outside the Green Belt. This is considered next.

Sequential approach to car parking

BAL's search for additional surface parking prioritised land outside the Green Belt. The search criteria considered passengers travel routes; land availability and accessibility to the major highway network. BAL initially identified 25 sites which was reduced to a 'short-list' of 12 sites for further testing. Further testing considered the size of the site and its parking capacity; its distance from the airport and the transfer journey time; its accessibility to the strategic road network and public transport; its likelihood of use; compatibility with adjoining land uses and the complexities and cost of carrying out development. BAL later confirmed that car parks with 900 spaces is the minimum viable threshold (to them), although smaller sites would also be considered if they are adjacent to major roads with public transport services running to/from BA.

BAL's 12 shortlisted sites and the notional parking capacity for each (up to a limit of 4,000 spaces) are shown in the table below.

Site	Size Hectares	Parking Capacity (4000 spaces max)
Severn Beach (by M5 / M49 Junction), Bristol	38.9	4000
Avonmouth North West, Bristol	14.8	4000
Avonmouth North East, Bristol	5.8	4000
Bristol Water Depot, Bedminster, Bristol	0.8	200
Freight Yard, near Parson Street Station, Bristol	1.9	1520
Land at Worle Parkway Railway Station, Worle	1.4	320
Disused PH, West Town Road, Backwell	0.6	120
'Davan Caravans', St Georges, WSM	1.2	300
Land near M5 Junction 21, WSM	9	4000
Former quarry in North Somerset (in Green Belt)	8.5	4000
Farmland near Yew Tree Farm (in Green Belt)	3.6	2880
Farmland at Lye Cross Farm A38 (in Green Belt)	1.8	1440

The 5 sites in Bristol are outside the Green Belt and within in built-up areas. Four of these sites meet BAL's minimum viability threshold (900 spaces). The site at Severn Beach is in South Gloucestershire, while the other Bristol sites are in Bristol City Council's administrative area.

BAL discount the two sites at Avonmouth due to high remediation costs and their distance (22km to 28km miles) and transfer time (22 minutes to 1 hr 15 minutes depending on traffic) to BA. The Council sought Bristol City Council's (BCC) views on the suitability of these sites being developed as Park and Ride sites, and whether it knew of any other potential P&R sites in Bristol.

BCC's response was that the Avonmouth North East site is now built-out and no longer available for development. The Avonmouth North West site is a landfill site associated with a nearby chemical works. As an employment site, it is afforded protection under BCC's development plan and is unsuitable for a Park & Ride use. The site near Parson Street is unsuitable for a Park & Ride use due to major concerns about local air quality, and it previously rejected a proposed bus depot and car park for these reasons. BCC has not commented on the Bristol Water site and it has not indicated that there are any other know sites in their area which may be suitable for an airport P&R car park.

The Council consulted South Gloucestershire Council on the suitability of the site at Severn Beach. Its response was that the site lies within a designated employment and enterprise area, which prioritises 'B' Class employment uses and education or skills development. They say a Park & Ride facility would not comply with the policy requirements for the site and there would therefore be an 'in principle' objection. They have not indicated any other sites known to them would be suitable for airport Park & Ride.

The other remaining site from the shortlist which exceeds 900 spaces is land near 'M5 Junction 21'. This has a notional parking capacity of 4,000 spaces. This site is agricultural land outside the Green Belt. BAL say that a demand route analysis concluded that the daily maximum use from passengers originating from the South West region would not result in a commercially viable business for them. They also raised the additional concerns for this site including:

- Its distance from Bristol Airport (more than 16 km)
- The inability of the site to serve the Bristol conurbation;
- High land prices and need for remediation.

The merits of an airport park & ride site near J21 is considered in '*Alternative Park & Ride proposal*' below.

The sites at Davan Caravans and Worle Parkway are near to bus stops used for an hourly A3 Flyer service between Weston-super-Mare and BA. BAL discount both sites due to cost, distance and limited catchment from BA. The site at Backwell is considered too small and restrictive having regard to adjoining land uses.

The Council's assessment is that the land at Worle Parkway is a commuter car park for the adjoining railway station. Its surplus parking capacity on weekdays is often less than 100 spaces and this figure continues to reduce with greater uptake from rail commuters. Removing up to 300 spaces from general commuter use would not enhance sustainable travel and it may even reduce it if in the short term if there was a slow uptake from BA customers.

The Davan Caravans site is an established business. The claimed disadvantage of its distance from BA and its limited catchment area is not qualified, but the capacity of this

site and the net loss or relocation of the business, reduces the benefits of this site being developed as an airport Park & Ride site. Officers agree that the site in Backwell, is too restricted and too close to housing to be suitable for a P&R site.

Three other sites on the shortlist are located in the Green Belt. The former quarry site may have some advantages in that it is previously developed land, but the two other sites are green fields. Whether Green Belt sites detached from BA are better than those contiguous with the airport is dependent on their environmental impacts, but as all are in the Green Belt, they are not sequentially better than the application site.

Alternative Park & Ride proposal

A planning application (ref no. 19/P/0704/FUL) for a 3,000-space valet service airport Park & Ride site on fields just off M5 junction J21 was submitted by a landowner challenging BAL's conclusions about the availability of an appropriate site in that area. The proposed site was approximately 17km from BA, and it is close to the '*M5 Junction 21*' site discounted by BAL.

The applicant for that proposal (since withdrawn) contended that there were no planning issues preventing its development for an airport Park & Ride site. Policy CS28 of the Core Strategy ('*Weston-super-Mare*') however says that no strategic development will be permitted on the east side of the M5 Motorway in this vicinity. Policy DM30 ('*Off-airport car parking*') also applies and this policy only supports airport related car parking outside the Green Belt when it is associated with over-night accommodation. The aim of this policy is to manage demand for car travel by car and that the provision of car parks is balanced with the need to promote wider travel choices. This J21 proposal is not associated with over-night accommodation and therefore conflicted with DM30. That site also encroached significantly on land safeguarded for future improvement of the motorway junction and had unresolved issues including impact on ecology, archaeology and landscape.

In addition, BAL's parking proposals are a residual part of a wider surface access strategy led by proposals to improve public transport services to BA from key catchment areas. The purpose of this is to increase PT passenger travel to BA from (or nearer to) the source of the journey and reduce traffic. This includes improved PT services to and from the south-west and South Wales: which are the very the catchments areas targeted by application 19/P/0704/FUL. That proposal had no tie-in with wider PT improvements (other than the transfer service from car park to airport) and its most likely effect would have been to undermines the ASAS by encouraging more passengers to drive to the car park from source.

As matters stand, officers are not aware that there any other reasonably available and suitable sites outside the Green Bely that could be developed for an airport park & ride car park.

Other aspects of BAL's claimed 'Very special circumstances'

BAL note that the Local Plan 2036 '*Issues and Options Document*', outlines options for removing land in the Green Belt to facilitate the future growth of BA. This however is untested and to some extent reflects the airport's own draft master plan options. It was a consultation document and does not give support for airport development in the Green Belt. It has little weight at this stage.

For the proposed year-round use of seasonal 'Cogloop 1' car park, BAL contend that its impact on the openness of the Green belt is minor because it is already used for car

parking for 6 months each year and views of it outside the airport are very limited. Parking up to 3650 vehicles on land which is unused between November to April each year would affect its openness during these months. Very special circumstances are therefore required to justify the extended use.

For the proposed extension to the 'Silver Zone' car park, replacing a field with a car park would harm the openness of the Green Belt. BAL note that views of it will be restricted, much the same as the seasonal car park. Officers also give this point low weight.

'Permitted Development' in the Green Belt

Some objectors say that 'permitted development' rights under the 'Town and Country Planning (General Permitted Development) Order', which allow airport operators to carry out some airport development without planning permission should be removed, particularly for the part of the airport in the Green Belt. A similar request was made at the time of the 10 mppa application in 2011. On that occasion, the Council concluded that it would not be reasonable to remove permitted development rights within BAL's 'operational boundary': accepting this would enable some development to take place in the Green Belt, which has subsequently happened. Officers see no reason to reach a different conclusion for this application.

However, BAL also own land to the east side of the A38 which is physically separated from the airport. They contend it is part of their operational land. This may be so, but the land is undeveloped open fields in the Green Belt. It is considered that 'permitted development' rights should be removed from this particular area if planning permission is granted.

Summary

It is accepted that additional passenger car parking is essential to meet the requirements of the proposed expansion in passenger numbers. BAL's contended need for circa 3,900 additional spaces is considered further in '*Issue 11: Parking*'. The initial additional car parking need, however, is less at 3,200 spaces, but there is the potential that with further evidence, a case for the other 700 spaces might also exist. Most of the additional demand is for surface parking which cannot be delivered in the GBI. The sequential approach rightly prioritised sites outside the Green Belt and officers are satisfied that there are presently no other reasonably available and suitable sites outside the Green Belt that would meet this need. The combination of additional parking provision and the absence of sites outside the Green Belt are considered to amount to very special circumstances and these clearly outweigh the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal.

The Town and Country Planning (Consultation) (England) Direction 2009 requires local planning authorities to consult the Secretary of State before granting planning permission for inappropriate development in the Green Belt which, by reason of its scale or nature or location, would have a significant impact on the openness of the Green Belt. The 2,700-space surface car park and the permanent use of the seasonal car park significantly would have such an impact and exceed this threshold. This means that a resolution to approve planning permission by the Council would trigger a referral to the Secretary of State. The Secretary of State would then determine whether to 'call-in' the application for his determination through a public inquiry or allow the Council to determine it as it sees fit.

Issue 13: Landscape and Visual Impacts

Policy CS5 of the CS (*'Landscape and the historic environment'*), DM10 (*'Landscape'*) of the 'Sites and Policies Plan' and paragraph 170 of the NPPF require development proposals to protect and enhance the character, distinctiveness, diversity and quality of the landscape. Policy DM11 (*'Mendip Hills AONB'*) of the DMP and paragraph 172 of the NPPF look to conserve and where possible enhance the landscape and scenic beauty of the AONB and its setting. DM9 (*'Woodland and Trees'*) seeks to retain trees but replace or add new trees where possible. DM50 (*'Bristol Airport'*) says development in the GBI will be permitted provided it is suitably sited, designed and landscaped.

BA is in Natural England's National Character Area 118 - *'Bristol, Avon Valleys and Ridges'* and the airport is said to dominate the *"hilltop along from Dundry"*. The 'North Somerset Landscape Character Assessment' 2018 (the 'LCA') shows BA is in the 'G1 Broadfield Down Settled Limestone Ridge' Landscape Character Area, which is characterised by open and exposed landscapes. The LCA says BA *"dominates the central section of the G1 landscape character area"* and it has a *"profound influence"* on its character.

Chapter 9 of BAL's ES assesses the likely significant effects of the proposed development on landscape and visual effects. A key part of this assessment is BAL's Landscape and Visual Impact Assessment (LVIA), which evaluates construction and operational impacts of the proposal. BAL refer to the LVIA being carried out in accordance with the 'Guidelines for LVIA' (GLVIA3), which is concerned with: *"how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character."*

The LVIA study area is 5km from BA's boundaries, but it extends 10km to the south to include parts of the Mendip AONB. The LVIA assessment area is considered acceptable. It includes direct effects upon the landscape elements within the application site and direct and indirect effects upon landscape character and landscape designations within the LVIA study area.

The table below summarises BAL's assessment of the impacts of the proposal on each LCA within the LVIA study area. Some LCA's are outside North Somerset.

Landscape Character Area (LCA)	Sensitivity of receptor	Magnitude of change	Overall impact in terms of significance
Broadfield Down Settled Limestone Plateau	Low	Low	Minor & not significant
Mendip Ridges and Combes	High	Negligible	Minor & not significant
Cleeve Ridges	High	Negligible	Minor & not significant
Dundry Settled Hill	Medium	Negligible	Negligible and not significant
Chew Rolling Valley Farmland	Medium	Negligible	Negligible and not significant
Thrubwell Farm Plateau*	Medium	Negligible	Negligible and not significant
Chew Valley*	Medium	Negligible	Negligible and not significant
Mendip Slopes*	High	Negligible	Minor & not significant
Blagdon-Compton Martin Slopes*	High	Negligible	Minor & not significant
The Northern Slopes*	High	Negligible	Minor & not significant
The Plateau*	High	Negligible	Minor & not significant

* LCA's in adjoining local authority areas

The LVIA considers that the most significant impact on any LCA is 'minor and not significant'. This is the 3rd lowest from 4 possible outcomes using the 'GLVIA3' guidelines. This conclusion is reached because:

- The development would not introduce new landscape characteristics nor significantly modify existing landscape characteristics.
- The visual impact of the development will be perceived as incremental growth, and it will typically have a minor impact on LCA's.
- Increases in aircraft movements would not significantly impact on the landscape character including tranquillity, when assessed against the 10 mppa baseline. The same conclusion is suggested for traffic impacts.
- The proposal would not extend the proportion of the LCAs affected by the operation of Bristol Airport.

The airport, because of its built-up appearance and widespread environmental impacts arising from aircraft noise and road traffic, has an urbanising effect on the characteristics of some of the LCA's within the LVIA area, which are further from the airport. In that context it is noteworthy that the CPRE's 'tranquillity mapping' from 2007 (taken when BA served about 5.9 mppa) considered BA and its setting to have low levels of tranquillity. At that time, the CPRE considered higher levels of tranquillity were perceived at elevated parts of the Mendip Hills AONB, Chew Valley Lake and Dundry Hill. Natural England and the Mendip Hills AONB Partnership suggest that the impact of flights and road traffic on the AONB, which begins 3km to the south of the airport, is more significant than is suggested by BAL in the LVIA. They contend that increasing the frequency of flights and a growth in traffic levels will exacerbate the influence of the airport on the character and tranquillity of the AONB to its detriment.

BAL acknowledge that noise from flights and road traffic is one of the most tangible activities that impact on the character of local communities near to BA. This is examined in Issue 5 of this report. They say that average noise levels at the AONB boundary are typically 35 dB LAeq,16hr and these levels are below the threshold where adverse effects on health and quality of life are detected. Officers agree with this. Furthermore, the change in noise levels from airport related road traffic growth between 10 and 12 mppa is likely to be imperceptible. Traffic volumes at 12 mppa (considered in 'Issues 8-11 inclusive') are not expected to result in significant increases to communities in the AONB.

Some objectors say that even if noise from flights is within permitted levels, the sight of more frequent aircraft movements detracts from the character of the wider landscape which is predominantly rural. Furthermore, there are many high amenity and well-used public areas near to the BA, including the Mendip Hills AONB; Blagdon and Chew Valley Lakes; the Avon cycleway; the Strawberry Line; Felton Common and elsewhere where the rural experience would be lessened by the sight of increased aircraft movements. The impact of aircraft movements arising from BA is however a long-established feature that effects on the character of these landscapes. The projected increase in flight numbers is however only 11%, which is considerably less than the 20% increase in passenger numbers. Officers consider this level of growth is likely to have a low impact on the character of these landscapes.

Some objectors oppose the application because they consider the increased development at the airport would result in additional lighting and this would contribute to a reduction in dark skies, which they say is a strong and positive characteristic of the wider rural area. In

response, BAL's LVIA acknowledges that artificial lighting at BA is seen from various viewpoints; both close to and further from BA. Officers agree with this and consider that this has some moderate close-range impacts on dark skies. From elevated parts of the AONB however, airport lighting is one of several light clusters seen in the wider setting. Others include street lighting along the A38 and lighting within villages and at the south western edge of Bristol. The quantity of additional lighting in the proposed extension of the 'Silver Zone' is expected to make very little difference to existing lighting levels.

The grassland lost for the car park extension would have a moderate harmful impact on landscape in its own right, but it is largely restricted from public views and its development will have a minor impact on the characteristics of the 'G1' LCA. The proposed localised road widening will have a minor impact on the landscape character.

The LVIA considers the visual impacts of the proposal from 47 locations including 9 different settlements; 11 individual or groups of properties; 4 recreational trails; 3 national or regional cycle routes; 4 areas public open land; 3 public roads; 12 public rights of way and 1 recreational facility (a Golf Course). Twenty-two locations were selected for more detailed visual impact assessments, including 6 locations in the AONB and 5 night-time impact assessments were carried out, two of which are inside the AONB. The 22 locations are:

- Downside Road, Backwell
- Two locations from a Public Right of Way, at Oatfield, Backwell
- Potters Hill, Felton
- Stanshall's Close, Felton
- Felton Common
- Four locations on A38 at airport roundabout entrances
- Four locations at Winters Lane
- Two locations at Crooks Bridle Path
- Blagdon Picnic Area (AONB)
- Burrington Ham (AONB)
- Beacon Batch (AONB)
- Dolebury Warren (AONB)
- Wrangle Crossroads (AONB)
- Burlidge Common (AONB)

The LVIA concludes that people would experience a 'Minor', 'Negligible' or 'No' impact (all equate to a '*Not Significant*' impact under 'GLVIA3' guidelines) impact at 40 locations. At 6 locations, the impact of the proposed development would be 'Moderate'. These are:

- Cooks Farm Immediately to the west side of the airport boundary;
- Cooks Bridle Path including 8 dwellings to the west of the airport;
- Long Lane to the east of the airport;
- Downside Farm north-west of the airport; and
- public rights of way at 'Lulsgate Bottom' and Potters Hill respectively.

'Moderate' impacts arise because of a cumulative increase in the quantity of development from these viewpoints, but it would not significantly change the nature of the outlook. The LVIA suggests there would be a 'significant' impact at Downside Road near to 'Melody Cottage', but this could be reduced to a 'moderate' impact through additional planting.

Officers consider that the visual impact assessment provides an extensive representation of the projected visual impacts of the proposals. The most significant impacts are likely to arise from the proposed MSCP3, which would stand out from some residential properties in Downside Road. Glimpsed views of MSCP3 from motorists travelling east along Downside Road are also likely, but these would be brief in duration and seen against the backdrop of other airport buildings and infrastructure. The impact of MSCP3 would be reduced to 'moderate' with further planting on the perimeter boundary of the airport as an early phase of development, which is possible since MSCP3 is not planned until 2024. Micro-wind turbines were initially proposed on the top parking deck of the MSCP 3, but the proposal was revised to remove this element.

The upper parts of the proposed eastern walkway, MSCP3 and terminal extension (including the canopy) would stand out from the public right of way (PROW) near Oatfield and Hyatt's Wood Road and Downside Farm and from 'Lulsgate Bottom', but the impact is 'moderate'.

The proposed widening of the carriageway requires the removal of some mature trees, other vegetation and stone walls along the north side of the A38 between the main airport entrance and West Lane and along a small section of Downside Road. The impact of this is that airport buildings and infrastructure would be more noticeable from a short section of the A38 when approaching from the east. The same approach already has a built-up appearance and character however and the impact of this change is moderate to significant. Replacement roadside planting would soften its impact of the new development.

The change from 'Potters Hill', may enable elements of the eastern walkway to be seen, but it is likely to have 'moderate' impacts. From Long Lane some new buildings may be visible, but these would be filtered by vegetation. Views of the extension to the Silver Zone car parks are very limited outside the airport and the visual impact would be minor. Landscaped earth bunds along its boundary would further contain its impact. Longer distance views of the 'Silver Zone' extension from elevated parts of the AONB will be difficult to distinguish.

The broader impact of other proposed development when seen from the AONB varies from place to place, but its impact is generally 'minor' due to the distance and vastness of the views from the AONB. The sight of more frequent aircraft movements, which is estimated to increase per by around 11% per annum above the consented (10 mppa) baseline may lessen the perceived peacefulness of the AONB, but the sight and sound of flights from the AONB is already long-established and the impact of the growth is likely to be no more than 'moderate'.

Some objectors say that more tree planting should be undertaken in the 'Silver Zone' car park. BAL, through its 'Integrated/embedded landscape, visual and ecological mitigation masterplan' identifies areas, at or near to its boundaries, where new tree planting of ecological improvement is proposed. This will increase the volume of trees and other vegetation at the airport. The Silver Zone car park however relies on dense block parking. This produces an efficient use of land, but also reduces the scope for soft landscaping.

Overall, it is considered that BAL has optimised planting and this strikes a sensible balance relative to the practical operation of the airport. The proposal is therefore considered acceptable in terms of its impacts on landscape character and visual impacts.

Issue 14: Biodiversity

The Natural Environment and Rural Communities (NERC) Act 2006 places a duty on Local Authorities to have regard to the conservation of biodiversity in exercising their functions.

The Conservation of Habitats and Species Regulations 2017 (*'The Regulations'*) also apply. Their objective is to protect biodiversity through the conservation of natural habitats and species of wild fauna and flora and it sets out legislative protection measures for such habitats and species. The Regulations also provide protection for designated sites supporting internationally-important habitats or populations of such species, known as *'European Sites'*. Regulation 63 states:

"63. — (1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of that site,

must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives."

In relation to impacts on designated sites, Regulation 64 also applies if a significant negative impact is cannot be ruled out:

"64. — (1) If the competent authority is satisfied that, there being no alternative solutions, the plan or project must be carried out for imperative reasons of overriding public interest (which, subject to paragraph (2), may be of a social or economic nature), it may agree to the plan or project notwithstanding a negative assessment of the implications for the European site or the European offshore marine site" (as the case may be).

The application poses potential risks to horseshoe bat populations associated with the North Somerset and Mendip Bats Special Area of Conservation (SAC), rather than to individual bats or roosts, so Regulations 63 and 64 are applicable in this instance. The Regulations also set out offences in relation to individual protected species under Regulation 43, although a license may be obtained (from Natural England) for something which would otherwise be an offence.

If the law will be broken, a 'derogation' licence can be applied for from Natural England. The licence needs to meet the requirements of the legislation including the three derogation tests as set out in Regulation 55. Other relevant legislation is the Wildlife and Countryside Act 1981 (as amended), the Protection of Badgers Act 1992 and the Hedgerow Regulations 1997.

In terms of the development plan, Policy CS4 (*'Nature Conservation'*) of the CS states biodiversity will be maintained and enhanced where possible. This translates into practical guidance through Policies DM8 (*'Nature Conservation'*) and DM9 (*'Trees and Woodland'*) of the Sites and Policies Plan, and these policies accord with Section 15 of the NPPF *'Conserving and enhancing the natural environment'*. Policy DM8 says development which could harm legally protected species or those of principal importance (*'Section 41 Species'*) will not be permitted unless harm can be avoided or mitigated. The Council's Supplementary Planning Documents (SPD's): *'Biodiversity and Trees'* (2005) and *'North Somerset and Mendip Bats Special Area of Conservation (SAC) 2018'* also apply and they provide detailed policy of these matters.

The application site does not contain statutory or non-statutory designated nature conservation sites. The North Somerset and Mendip Bats Special Area of Conservation ('SAC') is however approximately 2km west of the airport and approximately 3.4km from habitats which will be physically changed as a result of the proposals. There are also 14 statutory sites of national importance within 5km of the site, including 10 Sites of Special Scientific Interest (SSSI), Local Nature Reserves (LNRs) and the Mendip Hill Area of Outstanding Natural Beauty (AONB).

The 'SAC' is designated due to the populations of lesser horseshoe and greater horseshoe bats (which are European Protected Species) that it supports. Bat surveys of BA show that no bat roosts were found within the area subject to proposed development, but areas impacted by the proposals are used as foraging and commuting habitats by lesser horseshoe and greater horseshoe bats. Other protected species surveys from 2018 confirmed that great crested newt, dormouse and common reptiles were not found and are unlikely to be present within the area of works, Badgers and common species of breeding birds were found to use perimeter vegetation within the site boundary.

As well as a focussed assessment within the site including surveys, the Environmental Statement also considered impacts up to 10km from BA. The Ecological Impact Assessment focussed on the projected impacts of the proposed development in terms of:

- Land-take/ land cover change/ construction;
- Increased light, noise and vibration;
- Increased vehicle movements (road traffic and aircraft);
- Pollution (impacts on ground and surface water contamination/ eutrophication); and
- Air quality changes, including dust deposition and emissions.

The projected impacts are tabulated in relation to different biodiversity receptors, including:

- The North Somerset & Mendip Bats SAC
- North Somerset & Mendip Bat SAC constituent SSSIs: Brockley Hall Stables SSSI and King's Wood SSSI, Banwell Caves, Banwell Ochre Caves SSSI, Compton Martin Ochre Mine SSSI, and Wookey Hole SSSI, Cheddar complex SSSI
- Goblin Coombe SSSI
- Avon Gorge SAC and constituent SSSI
- Mendip Woodlands SAC and constituent SSSI
- Chew Valley Lake SPA and SSSI
- Felton Common
- Non-statutorily locally designated Sites of Nature Conservation Interest
- Ancient Woodland (acting as a surrogate receptor for all woodland) including ancient woodland at Brockley Combe, Garleys Wood, Hyatt's Wood, Oatfield Wood, Lye Wood, Scars Wood, High Wood, Horts Wood, Little Horts Wood, Tuckers Grove and Whitley Coppice, Shippenhays Wood, Prestow Wood and Corporation Woods.)
- Groundwater-fed surface watercourses (associated with the aquifer under the application site) (River Kenn, Little River, Land Yeo, River Chew, Winford Brook, Congresbury Yeo).

Supplementary information for potential impacts on the Severn Estuary SPA, SAC, SSSI and Ramsar site has also been provided.

The key impacts on biodiversity are set out below.

Habitat Regulations Assessment (HRA)

The proposed extension to the Silver Zone car park (2,700 spaces) would result in a net loss of approximately 3.73 hectares of grazed cattle land. A further 0.16 hectare of mainly sycamore woodland will also be removed to enable the proposed highway improvements works on the A38/Downside Road. Both areas have been subject to extensive ecological surveys and both sites revealed significant activity from lesser horseshoe and greater horseshoe bats.

The '*North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development*' (2018) says that where bat habitats functionally linked to the SAC bat populations are to be removed, the proposed development should only be supported where the Favourable Conservation Status of its qualifying features is maintained or restored by appropriate mitigation. This accords with the '*Conservation of Habitats and Species Regulations 2017*'.

The Regulations require that a 'screening' exercise is carried out to determine whether any European sites are likely to be significantly affected by the proposal, either alone or in combination with other projects and, if so, whether these effects will result in any adverse effects on the European site's integrity. If significant effects are likely, then a further 'Appropriate Assessment' will need to be carried out. 'Screening' and any 'Appropriate Assessment' is part of the Habitats Regulations Assessment (HRA) process.

The proposed extension to the Silver Zone car park is within 'Zone B' of the 'Bat Consultation Zone' identified in the '*North Somerset and Mendip Bats Special Area of Conservation*' SPD. The A38 widening proposals are within 'Zone C'. The SPD says that where European protected species within Zones B and C are likely to be adversely affected by development, mitigation should be secured to avoid adverse effects on the integrity of the SAC. This might require that a replacement habitat of at least equal biodiversity value is provided, and the SPD includes a biodiversity metric for calculating the size and/or type of replacement habitat to be provided. Where a replacement habitat is proposed, the SPD also requires an Ecological Management Plan for the site setting out how the site will be managed for SAC Bats.

BAL's proposed mitigation for the loss of the referred bat habitat, is a replacement habitat comprising approximately 6.34 hectares of land which they own at Wrington Warren approximately 1.4km to the west of the airport. Much of this land is woodland, with approximately 4.86 hectares (or just over 75% of the land) occupied by Larch and Scots Pine, with the remainder, which is part of Goblin Coombe Site of Special Scientific Interest (SSSI), being mixed yew/broadleaf woodland.

Some objectors say that since this land is already used as woodland and may already be used by bats, it does not constitute mitigation for habitats lost within the proposed development. The coniferous woodland at Wrington Warren does not however provide an optimal foraging habitat for horseshoe bats at present and is low-scoring in the metric as a result. Its proposed conversion to an open mixed/broadleaved woodland, which is then appropriately managed in accordance with details that would need to be agreed with NSC, would produce a much higher value habitat for horseshoe bats, as evidenced through the biodiversity value multipliers set out in the SPD. This would provide acceptable mitigation to allow the SAC bat habitats to be removed, and the proposed mitigation would result in the Favourable Conservation Status of the SAC being maintained. The replacement

habitat would however need to be available before horseshoe bat habitat within the site is lost and this can be controlled through planning conditions.

Some objectors query whether bats would access the replacement habitat given its distance from the SAC Bat habitat at Brockley Stables and intervening barriers such as main roads and light pollution. Evidence from radio tracking surveys, local surveys and ringing data has however shown that bats using Brockley Hall Stables SSSI disperse across the landscape, crossing potential barriers such as A-roads. There is also a second maternity roost and SSSI unit of the SAC at King's Wood and Urchin Wood which is connected to Wrington Warren through suitable woodland habitat with no notable barriers to dispersal. There is no reason therefore to suppose that the enhanced woodland mitigation at Wrington Warren would not be used by horseshoe bats. The success and net value of this replacement bat habitat will however depend on the timing of the restoration and improvement works relative to the loss of the existing habitat, and details of the restoration and its on-going management. A satisfactory framework for this has already been provided in "*Outline SAC/SPD Ecological Management Plan for North Somerset and Mendips Bat SAC SPD Species and Wider Biodiversity*" (Johns Associates, 2018) and "*Additional Information for Natural England*" (Johns Associates, 2019). These matters can be secured through planning conditions.

Additional Bat habitat creation at BA, as shown on the *Integrated/Embedded Landscape, Visual and Ecology Mitigation Masterplan* (version submitted August 2019) is also proposed. The main elements are:

- Reinforcing existing tall native hedgerow with hedgerow, scrub and standard trees. Extending scrub planting at northern boundary with Downside Road with provision for rides in scrub.
- Reinforcing woodland planting on the top and northern side of bund in NW corner. Plant climbers on trellis along northern side of acoustic wall.
- Limited amount of tree planting in Downside Meadow, provision of mown paths and information board.
- Existing woodland copse to east of A38 to have management regime amended to thin internal areas of woodland.
- Extend woodland copse east of A38 (4) to east and scallop eastern edge.
- Reinforce and thicken existing hedgerows.
- Introduce extra heavy standard trees into A38 boundary hedgerow and allow hedgerow section to grow out to maturity.
- Introduce small copses in the south-eastern and south-western corners of Gruffy's Field around existing building bat roosts. Ensure that in combination with the total area of scrub/tree cover within field this does not exceed 15% of surface area (for horseshoe bats). Extend and enhance existing bat roosts.
- Introduce parkland trees to Gruffy's Field to enhance existing patches of scrub so that the total area of scrub/tree cover within field does not exceed 15% of surface area.
- Existing woodland copse by Gruffy's Field to be managed to benefit horseshoe bats. New building bat roost.
- Restoring existing pond to enhance conditions for lesser horseshoe bats.
- Woodland management adjacent to A38/Downside junction.

Other measures proposed by BAL to mitigate adverse impacts on horseshoe and other bat species include sensitive lighting during construction and operation, avoiding light spill of

above 0.5 lux onto bat habitats. Details of sensitive lighting design would need to be secured by conditions.

The Council has undertaken a detailed Habitat Regulations Assessment (HRA) of the proposal in accordance with Regulation 63 of the Conservation of Species and Habitats Regulations 2017 (as amended). This considers the impact of the proposed development and other cumulative impacts arising from consented and proposed development at or near to the site. The cumulative assessment looked at over 20 development sites, ranging from development proposals at Portishead, Nailsea, land near Weston-super-Mare and other locations closer to BA, such as Congresbury, Backwell, Sandford, Langford and Yatton. Officers conclude that the proposals, alone or in combination with other plans and projects, would have no adverse effect on integrity of the North Somerset and Mendip Bats SAC, subject to appropriate mitigation measures that are proposed in this application.

The Council is required to consult with Natural England (NE) on the Habitat Regulations Assessment. It has done this and NE, in its updated comments (September 2019) say that they: *“concur with the assessment conclusions, providing that all mitigation measures are appropriately secured in any permission given, as set out in Part D Recommended Conditions.”* The HRA process has therefore been completed in accordance with the regulations.

Other Protected and Notable Species

Detailed surveys for other protected and notable species have been completed within the site. There are no trees suitable to support roosting bats which will be felled or buildings suitable to support roosting bats which will be demolished to facilitate the proposals. Impacts on foraging and commuting bats have been considered, including horseshoe bats, as detailed above. There are no great crested newt populations within 500m of the proposals and reptiles and hazel dormouse were not recorded on the Airport site during detailed surveys. There will not be a breach of the Conservation of Habitats and Species Regulations 2017 in relation to protected species under Regulation 43. Therefore, a Natural England licence would not be required in this instance.

Badger surveys indicate that the existing landscape bund on southern edge of the seasonal car park (proposed for permanent use in this application) which was designed with badger tunnels, is used by badgers and it supports a badger sett. It is proposed to remove a small section of the bund to form a vehicle connection between the seasonal car park the proposed additional car park. This is acceptable provided the works are carried out under a licence from Natural England (this is separate to planning permission) and/or provided the resulting bund is designed to incorporate a buffer zone of at least 20-30m from badger sett entrances. The latter is preferred and is likely to be the approach followed. A detailed mitigation plan, informed by an update badger survey, can submitted with a reserved matters application. This can be secured by a condition to ensure compliance with the Protection of Badgers Act 1992.

Brown hare (a NERC Act 2006 Section 41 Species of Principle Importance) are however recorded as using the seasonal car park temporary car park and it could therefore be using the site of the additional car park. The Silver Zone extension is proposed to have similar surface treatment to the adjoining car park with colonising grasses which may be of use for this species. The extensive airport grassland also provides a similar foraging resource for Brown Hare.

Hedgehogs (a NERC Act 2006 Section 41 Species of Principle Importance) may be present in dense vegetation and woodland. If hedgehogs are found during works, they

must be moved to safety to a refuge area within the landholding but away from the works. This will need to be included within a condition that deals with construction management. Other notable species are however unlikely to be significantly negatively impacted, including notable invertebrate species, based on habitat types impacted.

Species of Principal Importance listed on Section 41 of the NERC Act 2006 have been subject to recent population declines. These species are not afforded statutory protection, but consideration of protection and habitat enhancements for these species is required under the NERC Act 2006.

Measures to protect nesting birds have been detailed and are acceptable to meet the requirements of the Wildlife and Countryside Act 1981 (as amended).

Other Impacts

The impacts of the proposal on bird populations related to the Severn Estuary SPA/SSSI/Ramsar, Chew Valley Lake SPA/SSSI and Blagdon Lake SSSI have been considered, but there is no credible risk of impacts to these features. Further justification is provided in the Habitats Regulations Assessment (Appropriate Assessment). This is because only aircraft flights within less than 300 metres of these habitats are reasonably likely to cause disturbance and displacement of birds. It is noted however that the risk of 'bird strike' is a critical issue for aviation safety and BAL avoid low approaches over these areas, except in emergency situations. Therefore, impacts on bird populations at the SPA sites and Blagdon Lake were scoped out of the HRA/AA in agreement with Natural England.

There are some pockets of species rich grassland at the airport which will be affected by the proposals. BAL's intention is to translocate this grassland to other parts of the airport as part of the development. This is not an ideal approach, but it can be accommodated with care and secured by condition. Species-rich lowland meadow is a Habitat of Principal Importance listed on Section 41 of the NERC Act 2006. Although not afforded statutory protection, retention and enhancement of this habitat type needs to be considered through the planning process to meet the duties of the LPA under the NERC Act 2006.

The Council's Ecological Consultant has referred to the potential impact that oxides from Nitrogen (NO_x), nitrogen dioxide (NO₂) and other particles and acid deposition may have on local designated sites, including King's Wood and Urchin Wood SSSI, Goblin Combe SSSI and Felton Common Local Nature Reserve (LNR). This is dealt with in BAL's: '*Response to Comments from North Somerset Council on Biodiversity*'. The conclusion is that air quality impacts on key ecological sites (including SSSI's and SAC's) and local nature reserves are likely to be insignificant, and do not require further investigation, where:

- For SSSI's and SAC's, the short-term predicted change (PC) is less than 10% of the short-term *air quality assessment level* (AQAL); and the long-term PC is less than 1% of the long-term AQAL.
- For local nature sites, the short-term PC is less than 100% of the short-term AQAL; and the long-term PC is less than 100% of the long-term AQAL.

These values reflect case law (the 'Wealden judgement' 2017). Air quality assessment results show the predicted impact of the development on the AQAL is 'not significant' within the referred SSSI's/SAC and the LNR, and no further assessment is required. Wider impacts of the proposed development on air quality is assessed in '*Issue 5: Air Quality*'. Insignificant impacts do not necessarily mean no negative impact, but no damage

of note is anticipated to nearby sites including Felton Common Local Nature Reserve (LNR). No in-combination impacts are expected to arise that would alter the above conclusions.

There is no biodiversity objection to the application, subject to planning conditions.

No Net Loss and Net Gain of Biodiversity

To meet the NERC Act 2006, paragraph 175 of the NPPF and Policies CS4 and DM8, there should be no net loss and net biodiversity gain/ecological enhancement. Overall, there will be a small loss of non-notable habitats. Notable habitats (Habitats of Principle Importance) will be retained or sufficient compensation provided on at least a 'like-for-like' basis. A raft of mitigation, compensation and enhancement measures have been proposed including off-site replacement habitat for horseshoe bats which will result in at least no net loss and likely net gain of ecologically-valuable habitats.

Issue 15: Flood Risk and Drainage

Paragraph 155 of the NPPF requires that new development should be directed: *“away from areas at highest flood risk (whether existing or future). Where development is necessary in such areas, development should be made safe for its lifetime without increasing flood risk elsewhere.”* Policy CS3 of the CS (*‘Environmental Impacts and Flood Risk Assessment’*) and DM1 of the DMP (*‘Flooding and Drainage’*) have the same objectives and they require the individual and cumulative impacts of proposals not to increase flood risk at or beyond the development site.

BA is in Fluvial Flood Zone 1, which is a *‘Low Probability’* Flood Zone with a 1:1000 annual probability of flooding. There are no objections to development in Flood Zone 1 but major applications must be supported by a flood risk assessment to establish:

- whether a proposed development is likely to be affected by current or future flooding from any source, taking in to consideration climate change;
- whether it will increase flood risk elsewhere;
- whether measures (existing or proposed) to deal with these effects and risks are appropriate.

Chapter 12 of BAL's Environmental Statement (ES) deals with *‘Surface Water and Flood Risk’*. Its principal conclusions are that:

- Groundwater mapping shows that the application site overlies geology in the lowest category of risk from potential groundwater flooding.
- BA's surface water drainage system collects run off on-site, passing through interceptors to capture contaminants before it is discharged to ground.
- Foul drainage is discharged under licence to a foul sewer. The sewer drains to Wessex Water's Chew Stoke Sewage Treatment Works.
- A38 drainage adjoining the airport includes filter drains and road edge gullies and piped systems to soakaways adjacent to the Airport Tavern.

BAL propose two drainage strategies: one for the main development site and one for the proposed highway works. These include climate change predictions over a 50-year period and improvements in the condition of waterbodies within BA's hydrological zone. The construction and operation of the proposal would increase impermeable areas which could

lead to greater surface water runoff and flood risk. The proposed scheme however includes sustainable drainage with all runoff being managed on-site via infiltration. Mitigation measures retain construction runoff for treatment before discharge, preventing sediment or spillages entering the water environment. The conclusion is that the proposal will result in betterment over existing conditions and it will have no adverse effect on groundwater resources or quality.

The drainage proposals have been considered by the Council's Flood Management Team, the Environment Agency, North Somerset Levels Internal Drainage Board, Bristol Water and Wessex Water. All of these have said that they have no objections to the proposed development provided that planning conditions are imposed which require final working details of a drainage scheme being approved before construction begins. Appropriate conditions are included in the recommendation below.

Issue 16: Land Quality

Paragraphs 118, 170, 178 and 179 of the NPPF require development land to be suitable for its proposed use and not to cause soil or water pollution or land instability, unless it can be fully mitigated. Policy CS3 (*'Environmental impacts and flood risk management'*) of the CS has the same objectives.

Chapter 10 of the ES addresses 'Land Quality' and it shows that a *'Phase 1 Land Quality Assessment'* (LQA) was undertaken to establish the environmental and geotechnical conditions, risks, hazards and liabilities of the application site. The LQA considers potential impacts on, and the risks from, the aquifer beneath the site; water courses, chemicals or other contaminants, landfilling, quarrying, land stability, services and other risks during construction and when development is operational. It concludes that construction involves some nominal risks arising from the disturbance of soils, but there are no exceptional risks. Officers have no evidence to reach a different conclusion. Further ground investigations would however be required before development commenced, and this can be secured through planning conditions.

Paragraph 170b of the NPPF states that planning decisions should contribute to and enhance the natural environment by: *"recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land"*. The proposed new surface car park (2,700 spaces) would involve the development of 3.2 hectares (ha) of Grade 3a (*'Good Quality'*) agricultural land and 2.2 ha of Grade 3b (*'Moderate Quality'*) agricultural land. Grade 3a agricultural land, along with Grade 2 (*'Very Good Quality'*) and Grade 1 (*'Excellent'*) agricultural land, is defined as Best and Most Versatile (BMV) agricultural land in Natural England's Technical Note TIN049 (2012).

The loss of BMV agricultural land would not contribute to or enhance the economic and other benefits of the best and most versatile agricultural land. However, for the reasons set out in Issue 11 (*'Car Parking'*) and 12 (*'Green Belt'*), officers consider BAL has demonstrated sound planning reasons for allowing additional parking within and contiguous with the airport and most of the agricultural land adjoining the airport is Grade 3a. A loss of 3.2 hectares of BMV is regrettable but represents only 0.01% of all BMV agricultural land in North Somerset,

The loss of BMV is not so substantial as to warrant refusal of the application.

Issue 17: Heritage Assets

Policies CS5 (*'Landscape and the Historic Environment'*) of the CS and policies DM4 (*'Listed Buildings'*), DM6 (*'Archaeology'*) and DM7 (*'Non-designated heritage assets'*) of the DMP says development proposals should preserve the integrity of heritage assets. Paragraphs 189–202 of the NPPF has the same objectives. Chapter 14 of the ES deals with the *'Historic Environment'*. There are no Scheduled Monuments (SM's) within the application site, although 7 SM's and 1 Listed Building are within 500 metres of the site. Felton Conservation Area is approximately 900 metres from the airport. There are some Non-designated heritage assets in the application site, which are mainly remnants of its former use as a RAF base.

The Council's Archaeologist and Conservation Officer and Heritage England have considered the application, and all consider the proposed development would have no harm on any heritage assets.

Issue 18: Appearance and Design

The section of this report which describes *'The Application'*, itemises those reserved matters that are included in this application and those which are set-aside for subsequent approval. Full details of the scale and appearance of the proposed extensions to the passenger terminal are included in this application, but only the siting is provided for the eastern walkway, pier, MSCP3 and gyratory road.

Appearance and design include consideration of scale, height, appearance, layout, materials, landscaping, accessibility, energy efficiency, health & safety and measures to reduce crime. These requirements are dispersed between policies CS1, CC2, CS5 and CS12 of the CS and DM2, DM10, DM32 and DM33 of the DMP.

Policy CS2 requires new buildings to include micro-renewable technologies which generate 15% of the energy requirement for that building. A BREEAM (Building Research Establishments Environmental Assessment Method) *'Excellent'* standard is required for new buildings above 1,000 square metres unless it is demonstrated that this cannot be achieved. BAL's *'Design and Access Statement'* (DAS) refers to the above policies and they says that airport design is also influenced by security, passenger experience, demand and value for money.

Officers consider that the scale, design and appearance of the western terminal extension, which would stand out to public views, would integrate successfully with the current terminal building. The southern terminal extension, which encloses the space between the back of the terminal and adjoining passenger walkway, is also considered to be acceptable. The canopy and remodelled concourse will also form an attractive addition at the front of the terminal.

The only details included for the eastern walkway, pier and MSCP3 is siting, although indicative details of their height, massing and architecture are provided in BAL's Design and Access Statement. MSCP3 would be seen from parts of Downside Road, Hyatt's Wood Road, public footpaths on elevated ground and from some nearby residential properties. BAL's say the MSCP will be 5 levels high: "*the top level of MSCP Phase 3 will align with the top level of MSCP1*", which was part of the 10 mppa permission which was completed in 2019. Officers consider the scale of this building is acceptable, but its design, external materials and landscaping (which are reserved matters) will be crucial to

its success. BAL suggest timber panelling for external walls, with bespoke design measures to minimise noise and lightings. This is likely to be acceptable subject to an acceptable design detailing.

The eastern walkway and pier would be 8-10 metres high and several hundred metres long. The principle of these elements is acceptable, but a high-quality design will be required. An acoustic barrier (described as a fence) would adjoin the main access road, although its siting and appearance are reserved. Given its prominence from the A38 and internal road, high-quality specifications including soft landscaping in front of it will be required. The proposed gyratory road will result in a high proportion of hard-surfacing. This is acceptable provided it allows soft planting next to it. Changing ground levels across the site should help to reduce its impact and create opportunities for planting.

BAL propose to use micro-renewable technologies to achieve 15% on-going energy supply for the new buildings. It is proposed to minimise heat loss through thermal building materials and low energy heating, ventilation and air conditioning (HVAC) systems. These measures are acceptable and planning conditions can be imposed to ensure policy compliance. BAL's 'Pre-Assessment Report' is a high-level summary of credits they expect to achieve. This indicates that a BREEAM 'excellent' cannot be reached because some points which contribute to this standard cannot be achieved given the location and nature of the development. Officers agree with this but expect BREEAM 'very good' to be achieved. Compliance with this can be secured through planning conditions.

Accessibility in terms of passengers with reduced mobility is dealt with in para 3.3 of the BAL's Design & Access Statement. It refers to regulatory requirements and BAL set out how they would comply with these. Some objectors contend that noise during construction works will be prolonged and excessive, causing unacceptable levels of daytime disturbance. Construction would cause some level of noise disturbance, but this can be reduced under a 'Construction Environmental Management Plan'. Limited night-time working would be strictly controlled to reduce adverse impacts.

Overall, it is concluded that there are no unacceptable other impacts on nearby residents and buildings, and the movements between these are designed to ensure practical, safe, legible and welcoming spaces for all user groups. Officers are satisfied that the detailed elements included with the application, such as the proposed terminal extensions and terminal forecourt improvements, will achieve a high standard of accessibility. For other elements which would be the subject of reserved matters applications, accessibility aspects would be considered at the time of those applications. Conditions can be used to require BAL to submit detailed information, including finished level, lighting, materials and other elements in due course. This will enable the Council to assess the accessibility standards of each element.

Section 4.3 of the Design & Access Statement sets out BAL's approach to Health and Safety, including construction and airside operations. These refer to the regulatory requirements and other measures to be deployed to ensure that a very high level of health and safety is achieved.

The Crime and Disorder Act places a duty on local authorities to have regard to crime and disorder issues in exercising their functions. The proposed development has been considered by officers and the police design liaison officer, and there is no objection in terms of its potential to cause crime or disorder

There are no objections to the proposals in terms of appearance and design, which comply with policies CS1, CC2, CS5 and CS12 of the CS and DM2, DM10, DM32 and DM33 of the DMP.

Issue 19: Other impacts on residents

Planning Issue 13 considers how the proposed development would impact on views of the landscape on the outlook of residents who live near to the airport. Some elements, including MSCP3, passenger terminal extension, eastern walkway/pier and extension to the Silver Zone car park would increase the built-up appearance of the airport. Some residents consider this will be over-bearing and unsightly and unacceptably harm their living conditions.

The separation distance between the proposed developments and the nearest residential properties means that the proposed development is unlikely to have an overbearing impact on the outlook of the nearest residents or reduce privacy or adversely affect light receipt. The impact of proposed development on landscape character and appearance is also considered to be acceptable. Noise impacts from traffic, aviation, ground based activities and construction are considered in Issue 5.

Some objectors contend that noise during construction works will be prolonged and excessive, causing unacceptable levels of daytime disturbance. Construction would cause some level of noise disturbance, but this can be reduced under a 'Construction Environmental Management Plan'. Limited night-time working would be strictly controlled to reduce adverse impacts. Overall, it is concluded that there are no unacceptable 'other' impacts on nearby residents.

Issue 20: Major Accidents and Disasters

'The Town and Country Planning (Environmental Impact Assessment) Regulations' 2017 requires the risk of major accidents and disasters to be considered. This was carried out in chapter 16 of the EIA Scoping Report (reference number 18/P/3502/EA2) which preceded the application. The conclusion was that the proposal in terms of its individual and cumulative impacts and its susceptibility to risk from major accidents and disasters from other sources, was low and it could be scoped-out of the EIA.

In reaching this conclusion, the Council noted that for 'major accidents' (an occurrence resulting from an uncontrolled event caused by a man-made activity or asset leading to serious damage), the proposal would not introduce new activities or uses that are materially different in type or scale to those already carried out at the airport. The potential risks of major accidents from the construction and operation of the proposal, even allowing for the airport operating at a greater scale and intensity, will not significantly increase. There is no reason to suppose the proposal would increase the risk of major accidents.

Para 2.4.54 of the ES states that: *"No hazardous chemicals beyond those fuels and substances already present at Bristol Airport will be introduced as part of the Proposed Development. Furthermore, the airport operates to very stringent safety standards such that the risk of accidents involving hazardous substances occurring and their magnitude is considered to be very low"*.

In terms of disasters (natural occurrence leading to serious damage on receptors), which includes: projected impacts of climate change and more extreme weather conditions and

flood risk; ecological conditions and energy provision, there is no evidence to conclude that these would have significant impacts on the integrity of the proposal. The location of the airport for example is in a low probability flood zone (see Issue 15) such that flood risk is unlikely to directly affect the operation of the airport. Building design in terms of its resilience to weather and security and the inclusion of micro-renewable technologies to self-generate some of its ongoing energy supply, is also to be incorporated from the outset (see Issue 18). There is no objection to the proposal in terms of major accidents or disasters.

Issue 21: Public Health and Wellbeing

The *EIA Regulations 2017* give effect to the amended European Union *EIA Directive* 2014/52/EU. One of the amendments clarifies that ‘population and human health’ factors should be on the list of environmental topics considered by EIA. Other legislation which applies to public health includes:

- The *Civil Aviation Act 2012*. This gives the Civil Aviation Authority (CAA) a role in promoting better public information about the environmental effects of civil aviation in the UK, their impact on health and safety, and measures taken to mitigate adverse impacts.
- The *Air Quality Standards Regulations 2010* transpose into English law the requirements of *Directives 2008/50/EC* and *2004/107/EC* on ambient air quality
- The *Environment Act 1995* sets provisions for protecting certain environmental conditions of relevance to health in the UK. Part II covers contaminated land and Part IV covers air quality;
- Part III of the *Environmental Protection Act 1990* regulates control of emissions (including dust, noise and light) that may be prejudicial to health or a nuisance

Paragraphs 91 and 92 of the NPPF require planning decisions to contribute to healthy, inclusive and safe places and support healthy lifestyles. Paragraph 180 says new development should be appropriate for its location and prevent adverse impacts on health and quality of life. Para 181 promotes opportunities to improve air quality.

The NPSE deals with ‘*Health and Quality of life*’ in paragraphs 2.12-2.14. It says the: “*World Health Organisation defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity and recognises the enjoyment of the highest attainable standard of health as one of the fundamental rights of every human being*”. The WHO define mental health as a “*state in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community*”.

The NPSE recognises that: “*noise exposure can cause annoyance and sleep disturbance both of which impact on quality of life. It is also agreed by many experts that annoyance and sleep disturbance can give rise to adverse health effects*”. Furthermore: “*long term exposure to some types of transport noise can additionally cause an increased risk of direct health effects*.”

The correlation between noise and human health is referred to in paragraph 3.20 of the APF. It says: “*decisions should aim to avoid a situation where noise gives rise to significant adverse impacts on health and quality of life as a result of new development, and to mitigate and reduce to a minimum, other adverse impacts on health and quality of life*.” The APF refers to how emissions from transport, including those at and around

airports can contribute to air pollution (air quality) and affect health. The overall objective is to ensure that air quality remains within acceptable standards and EU legislation sets legally binding air quality limits for the protection of human health.

The APF notes that the aviation sector is a major contributor to the economy, with economic prosperity being an important positive determinant of health. The economic benefits of aviation growth on social wellbeing are also set out in '*Beyond the horizon - the future of UK aviation: next steps towards an aviation strategy*'. As airports grow, it expects communities share in the economic benefits of this growth, and that adverse environmental impacts are mitigated where possible.

The '*Consultation Response on UK Airspace Policy*' refers to the need for future aviation policy to re-examine the impacts of aviation noise on health and quality and the role of different noise metrics in that process. In paragraph 2.73 however it notes that there: "*is not at present any available hard evidence to link outcomes on health and quality of life with frequency-based noise metrics*".

Policy CS26 of the CS ('*supporting healthy living and the provision of health care facilities*') supports proposals which promote healthy living and reduces health inequalities. It also recognises how environmental design; land use and the location of development can have a significant impact on people's exposure to noise and other environmental pollution. It promotes access to health and recreational facilities and employment which all contribute to physical and mental wellbeing. Policy CS26 emphasises the need for health impact assessments on large scale development and it expects applicants to demonstrate how proposed development will contribute to improving the health and wellbeing of the local population.

The most recent comprehensive review of research evidence on health effects from aviation noise was undertaken by the Civil Aviation Authority (CAA) in 2016: '*Aircraft noise and health effects: Recent findings*'. The key conclusions of that report were:

- The review looked at research since 2009 in transportation noise, in particular, aircraft noise and the resulting impacts on various health endpoints including cardiovascular disease, night-time effects on sleep disturbance, children's cognition, psychological effects, performance and annoyance.
- Research showing an association with aircraft and road noise and cardiovascular disease measures continues to mature. There is emerging evidence to suggest that cardiovascular effects are more strongly linked with night time noise exposure as opposed to day or total (24hr) noise exposure.
- With regard to night noise and sleep disturbance, there is growing recognition that average indicators such as 'Lnight' are insufficient to fully predict sleep disturbance and sleep quality and that the use of number of noise events (L_Amax) will serve to help understanding of noise-induced sleep disturbance. It is expected that new aviation policy will provide further clarity on the use of different metrics to assess noise and its impacts on amenity and health.
- With regard to aircraft noise and children's learning, further explorations of past studies have taken into account confounding factors not previously considered such as air pollution and concluded that these did alter the associations previously found. A number of studies, whilst reporting associations in primary school children, discover that the effects do not persist in secondary school aged children.

The conclusion, which seeks a move to a combination of average and number of significant noise events to assess noise-induced sleep disturbance, is not part of current national guidance where only an average measure of impact is applied. This dual approach of average and significant events does not currently apply to local planning policy.

Published evidence has also questioned the validity of the WHO Environmental Noise Guidelines for the European Region (2018) which called for much lower cumulative aircraft noise exposure levels. The study which challenged the guidelines is: Gjestland, T. (2018). A Systematic Review of the Basis for WHO's New Recommendation for Limiting Aircraft Noise Annoyance. *International Journal of Environmental Research and Public Health*, 15(12), p.2717. This paper gives a systematic assessment of the presented evidence with respect to annoyance from aircraft noise. A reply was published to a counter challenge by the researchers whose work formed the basis of the WHO guidelines.

BAL's Health Impact Assessment (HIA)

Chapter 16 of the ES examines the impact of the proposed development on human health and wellbeing. It is referred to as a '*Health Impact Assessment*' (HIA). It brings together many of the separate issues that are considered in other chapters of the ES and examined in the previous planning issues. The HIA has regard to:

- '*Health in Environmental Assessment: a primer for a proportionate approach*' (2018) produced by the Faculty of Public Health; and,
- Health and Environmental Impact Assessment: a briefing for public health teams in England (2018), prepared by Public Health England.

The HIA addresses the projected impacts of the proposed development on health and wellbeing during construction and when the development is operational. It examines physical and mental health outcomes. Four population groups are defined in relation to their potential sensitivity including: children and young people; older people; people with existing poor health; and people living in deprivation. Some people may fall into more than one category.

The table below summarises the conclusions. The impact of the 'sensitivity of the population' (the 'receptor') is considered using a scale of 'low', 'medium' and 'high'. The 'magnitude of change' is defined as 'small', 'medium' and 'large'. The 'significance' of the health impact is the sum the 'sensitivity' and the 'magnitude of change', and it is expressed as 'major' (significant), 'moderate' (probably significant) or 'minor/negligible' (not significant).

Health issues and population groups	Sensitivity of population	Magnitude of change	Significance
Construction – Air quality General population Vulnerable groups	Low High	Small Small	Negligible Minor adverse
Construction – Noise General population Vulnerable groups	Low High	Small Small	Negligible Minor adverse
Construction – Traffic General population Vulnerable groups	Low High	Small Small	Negligible Minor adverse
Community identity General population Vulnerable groups	Low High	Small Small	Negligible Minor adverse
Operation – Air quality General population Vulnerable groups	Low High	Medium Medium	Negligible Minor adverse
Operation – Noise General population Vulnerable groups	Medium High	Small Small	Negligible Minor adverse
Operation – Community identity General population Vulnerable groups	Medium High	Medium Medium	Minor adverse Moderate beneficial
Operation – Healthcare services General population Vulnerable groups	Medium High	Small Small	Negligible Minor adverse
Operation – Climate change General population Vulnerable groups	Low High	Small Small	Negligible Minor adverse
Operation – Traffic effects General population Vulnerable groups	Low High	Medium Medium	Negligible Minor beneficial
Operation – Economic effects General population Vulnerable groups	Low High	Medium Medium	Minor beneficial Moderate beneficial
Operation – Community identity General population Vulnerable groups	Medium High	Medium Medium	Minor adverse up to moderate beneficial Minor adverse up to moderate beneficial

Assessment

To assess the HIA, officers consulted with Public Health England (PHE) and the Council's Public Health Team. PHE are a statutory consultee for HIA's and has the expertise to advise on its acceptability. PHE's comments on the application show that it considers that the HIA has been carried out in accordance with good practice and its methodology and

scope to assess the likely impacts on health and wellbeing is proportionate to the proposed development.

Construction (temporary) impacts

During construction increased airborne dust could exacerbate pre-existing health conditions in the community, such as asthma or Chronic Obstructive Pulmonary Disease (COPD) and also lead to reductions in wellbeing from annoyance or reduced amenity. The impacts are likely to be 'medium' and 'short-term' without mitigation. However, by covering loose materials during conveyance and stockpiling and water spraying or dust sources during building operations, the potential adverse health impacts can be reduced to minor levels. BAL say such mitigation can be incorporated in to a Construction Environmental Management Plan (CEMP). Officers and PHE agree and note that the current and projected air quality around the airport will remain within legal limits (refer to *Issue 6: Air Quality*).

The health effects from construction noise could affect cardiovascular health, mental health conditions (stress, anxiety or depression), sleep disturbance and cognitive performance in children. The predicted increases in construction noise levels in this case are however localised and would be very close to existing day time background noise levels at the airport. Most construction works would take place during the daytime, but this could still affect some vulnerable groups (such as the very young, elderly, or shift workers). The significance of the effect would however be 'negligible' for the general population and 'minor adverse' (not significant) for vulnerable groups. The CEMP will be required to reduce noise impacts as far as possible.

BAL say some work would need to be undertaken at night including the taxiway link and taxiway widening. This has clear potential to have some harmful impacts, such as sleep disturbance, but working restrictions under a CEMP will significantly reduce such impacts.

BAL also say the proposed highway works could increase the risk of localised queuing on approach roads, which might affect emergency service response times. This could lead to related effects on physical and mental health (stress and anxiety), but BAL say that with temporary traffic management in place, these will be minimised. Officers agree, and the details of temporary traffic control measures will need to be agreed.

Operational Impacts

In terms of air quality, the HIA focusses on the impacts of nitrogen dioxide (NO₂) and Particulate Matter (PM) dispersion, which are the main combustion-related air pollutants. They say the main health outcomes could be increased risk of cardiovascular and respiratory related conditions. All projected changes in concentrations of all air pollutants will however remain within statutory acceptable levels as set by the World Health Organisation in terms of health protection. Officers agree with this based on the results on the air quality assessment in '*Issue 7*'. To that extent the health impact is contended to be 'negligible' to the wider population and 'minor adverse' to vulnerable groups. No specific action is required other than ongoing monitoring of air quality. Only if air quality reduced and did not comply with acceptable public health standards would intervention be required.

There are no 'receptors' where the annual mean NO₂ concentration level is predicted to exceed the annual mean Air Quality Assessment Level (AQAL) of 40 µg/m³. This conclusion reflects Defra guidance which suggests that where the annual mean NO₂ concentration is below 60 µg/m³, it is unlikely that there will be a breach of the one-hour AQAL.

The HIA indicates that the health effects from operational noise and vibration are most likely to impact on mental health conditions (stress, anxiety or depression), sleep disturbance and cognitive performance in children. Cardiovascular health impacts could also be an associated factor. The significance of the effect would be negligible for the general population and up to minor adverse (not significant) for vulnerable groups. The small increase in exposure for much of the local population is unlikely to result in a significant population health effect, but this affect is no more than 'minor adverse'. Officers' assisted by PHE comments agree with this assessment.

This however is dependent on noise mitigation being implemented. This will comprise operational restrictions and acoustic mitigation which will be controlled through planning conditions. This is further explained in set out in 'Issue 5'. The effect of this mitigation will require BAL to commit to a higher proportion of modern (quieter) aircraft being based at BA, with more stringent controls at night, where night impacts are, for most, more sensitive. The current noise insulation grant scheme is also improved. Officers consider these measures will limit the impacts on noise between the consented baseline and proposed development to acceptable levels in accordance with current policy.

PHE welcome an improved noise mitigation fund for properties (dwellings and other buildings, particularly schools) but they say that this needs to be under-pinned by evidence that the mitigation is fit for purpose in terms of achieving a healthy indoor environment based on effective noise reduction, ventilation, overheating risk, indoor air quality and need for ventilation. The uptake of the previous noise insulation grant scheme has been high (75%) and the increased monetary offer in the proposed scheme is likely to bring about further enhancements.

PHE comment on the minimum noise contour levels at which acoustic insulation should apply, which takes note of WHO's 2018 guidelines. These guidelines have not however been translated in to Government policy, as addressed in 'Issue 5'. BAL's noise insulation grant scheme does however exceed the minimum noise contour area set out in current policy (63 dB LAeq 16h) as well as that set out in the Green Paper 'Aviation 2050' (60 dB LAeq 16h). It is considered that BAL's proposed noise insulation scheme is acceptable.

A health-related concern not raised by PHE but made by numerous objectors is that increased flight frequency, particularly at night and in the shoulder periods, may exacerbate sleep deprivation to some and this adversely affects peoples' mood, concentration, stress levels and health. They say that even if properties are better insulated, it does not preclude people from hearing passing aircraft, nor does it mean that those living in quieter noise contours do not also experience sleep disturbance from night flights. Current policy (the APF) however requires aviation noise to be assessed and mitigated against the LAeq (*'the equivalent continuous A-weighted sound pressure level'*) over a defined period and '16h' refers to 07:00-23:00 hours. This is reflected in paragraph 8.10 of the CAA 'Survey of Noise Attitudes' (SoNA) in 2014, and the Green Paper 'Aviation 2050 – The Future of UK Aviation' (2018). Noise frequency indices and other metrics are supplemental to the LAeq metric. BAL's proposed noise insulation scheme accords with current policy.

PHE also note that the noise insulation scheme will not protect outside amenity spaces (such as private gardens and public parks) from increased noise exposure. Objectors also note this, and they say that more frequent day-time flights may reduce peoples' enjoyment and use of their gardens, public parks, footpaths and country walks: all of which also reduce informal recreation, exercise and wellbeing. PHE suggest that there may be

opportunities to create new tranquil public spaces that are accessible to those communities exposed to increased noise from the scheme. This reflects guidance in the PPG.

The results of the daytime noise impact however show that the number of properties in noise contours 54-63 dB L_{Aeq} 16h inclusive (these contours are above the 'LOAEL' up to the 'SOAEL') do not increase between 10 mppa (2021) and 12 mppa (2026). It is unlikely therefore that there is a case to require mitigation of external noise levels. In addition, there is no practical way to protect residential gardens from noise from overflying aircraft. The option of creating new public spaces in quieter noise contours would also be displaced away from the communities they are intended for.

PHE say it would be informative for BAL to express noise impacts arising from the proposed development in terms of Disability-Adjusted Life Year (DALYs) and in monetary terms. The significance of this is that one DALY equates to one lost year of "healthy" life. There is however no statutory or planning policy requirement for a developer to express noise impacts from a transportation scheme in terms of DALYs. Notwithstanding this, the World Health Organisation and European Commission published a report in 2011 on the Burden of Disease from Environmental Noise that reviewed a range of sources beyond aircraft noise such as road traffic noise. The report estimated DALYs on a European basis only. It also identified the challenge of making direct comparisons DALYs for different outcomes because of the qualities of evidence underlying different evidence-based calculations. The principle consideration for assessing impact of this application is around the effect on health and wellbeing rather than monetary terms and officers consider that the information contained in the report provides a range of evidence about potential impacts which have been assessed against approved methodologies.

In response to PHE's suggestion that BAL should set out a longer-term and broader strategy to mitigate noise and adverse impacts on quality of life, officers consider that this is addressed in the noise chapter of their ES and their draft carbon management plan. This includes measures to reduce noise and other emissions from aircraft taxiing, reduce use of auxiliary power units and mobile generators. BAL has also initiated an airspace change proposal: the consideration of which takes place outside the planning system, but it will examine noise impacts on communities as a result of a proposed re-design of airspace around BA. This is regulated outside the planning process.

For 'community identity' effects, the main health outcomes are mental health conditions (stress, anxiety or depression) due to the impact that the proposed development may have on community cohesion. The HIA acknowledges that community identity is influenced by the environmental impacts, such as noise and traffic, but there are also positive aspects to this including job opportunities. The HIA considers the health impacts range from 'minor adverse' to 'moderately beneficial'. Officers consider the current impact is more likely to be 'minor adverse', but it is unlikely that this will change as a result of the proposed development: during its construction or operational phase.

The HIA suggests that the effects of passenger growth on healthcare services could lead to a small increase in demand for GP emergency appointments by non-registered patients, or attendance at A&E (including transport by ambulance). GP attendance may include the potential for a small increase in demand for 'fitness to fly' assessments where such assessments are requested by the airline once the passenger is already at the airport. In relation to communicable illness, BAL have Port Health Incidence Procedures in place. BAL receive information from the WHO and work with PHE and NSC to ensure

arrangements are unified and in line with any current risks. This would continue to be the case under the proposal. They conclude the impact would be negligible for the general population and minor adverse for vulnerable groups. Officers have no evidence to disagree.

The HIA assesses changes in climate altering pollutants (GHG's) arising from the proposal and the effect these may have on human health. It says the main health outcomes (globally) are heat-related disorders, respiratory disorders, infectious diseases, food insecurity and mental stress associated with natural disasters. It acknowledges transport contributes to climate-altering pollutants, notably carbon dioxide, while aviation and surface access related road transport are both climate-altering pollutant sources. The HIA suggests that the change arising from the proposed development would not be significant in the context of UKs climate change obligations and they note that climate change is being addressed through international cooperation, with emissions targets and strategies set at the national level not the individual project level. They consider the significance of the effect would be negligible for the general population and minor adverse for vulnerable groups. The operational contribution by the proposal to climate altering pollutants should be considered long-term, making an incremental addition to climate change related risk factors for population health (globally). Officers agree with this conclusion and the impact of the proposed development on climate change is considered in Issue 4.

In terms of traffic effects, the HIA concludes the main health outcomes are road traffic incidents, emergency response times, journey times, physical health (cardiovascular health), mental health (stress, anxiety or depression), obesity and levels of physical activity. Once operational, permanent infrastructure improvements included in the proposed development are likely to make a modest but beneficial impact of public health outcomes in terms of reducing congestion and journey times. Infrastructure improvements are also proposed to local foot and cycle paths near to the main entrance. BAL say these changes would have a negligible impact on human health for the general population and up to minor beneficial for vulnerable groups. Officers agree.

The HIA indicates that the main socio-economic health related impacts of the proposal are positive in that the provision of long-term good quality employment opportunities (directly at Bristol Airport, or indirectly through wider economic investment within the region facilitated by the expansion) are likely to have a long-term beneficial effect on population health locally and, to a lesser extent, regionally. Such benefits could include reducing levels of poverty and inequalities. The impacts are contended to be 'minor beneficial' for the general population and up to 'moderate beneficial' for vulnerable groups. While the scale of the benefits set out in BAL's economic impact assessment are considered (based on an independent assessment) to be lower than claimed by BAL. they would still provide long-term good quality employment opportunities, and this is likely to have a long-term beneficial effect on population health.

PHE note that the aquifer beneath the application site is sensitive to pollution. The Council notified the Environment Agency of this matter (the statutory consultee). PHE do not consider the proposal would result in contamination of the water course provided planning conditions are imposed to agree best working and management practice. Officers agree with this.

PHE also note that the application does not assess health risks associated with Electromotive Force (EMF). They say there is a potential health impact associated with the electric and magnetic fields around substations, and power lines and cables. The

application does not however include any new installations of this type, such that there is no clear reason why an EMF assessment should be undertaken.

Conclusion

BAL's projected Health Impact Assessment is realistic. There are no overriding health or well-being impacts which would warrant refusal of the application, albeit this is contingent on impacts being mitigated in accordance with the planning conditions and planning obligations recommended in this report.

Issue 22: Planning Obligations

Planning obligations secured through a Section 106 Legal Agreement for the 10 mppa permission (ref no. 09/P/1020/OT2) required BAL to fund public transport services improvements; implement a staff travel plan; make financial contributions towards sub-regional transport schemes and local highway improvements; carry out air and ground noise reductions schemes; carry out continuous air quality monitoring; commit to a skills and employment plan; and make annual payments in to an environmental improvement fund. Some obligations were one-off requirements. Others are ongoing.

The 10 mppa S106 Agreement has been reviewed as part of this planning application. A new Agreement is required, if planning permission is to be granted to secure the necessary mitigations. Since the 10 mppa permission was granted, the Council has adopted a Community Infrastructure Levy (CIL), which requires developers to make set payments for certain types of infrastructure. The Council is not permitted to enter into S106 agreements requiring infrastructure that is to be funded through the 'CIL'. There are however no matters arising from the proposed development that require infrastructure payments under CIL. There are however numerous planning obligations that are required to mitigate the impacts of the proposed development, which cannot be addressed through planning conditions.

Regulation 122 of the 'CIL' Regulations 2010 (as amended by the 2011 and 2019 Regulations) and para 56 of the NPPF 2019, says that a planning obligation may only constitute a reason for granting planning permission for the development if the obligation is:

- (a) Necessary to make the development acceptable in planning terms;
- (b) Directly related to the development; and
- (c) Fairly and reasonably related in scale and kind to the development.

The range of obligations that is required will cover the following headings:

- Surface Access, Public Transport, Staff Travel, Highway Works, phased delivery of new Parking, and Parking Enforcement
- Air and Ground Noise mitigation
- Air Quality
- Airport Local Community Fund
- Employment delivery

Appendix 3 of this report sets out the particular requirements in greater detail. If the Committee resolves to approve the application, these would then need to be worked up in to a legally binding Section 106 agreement, which would be completed before planning permission is formally granted (i.e. the decision notice issued).

Issue 23: Interactive and Cumulative Impacts

This section of the report addresses the possibility of interactive and cumulative effects. It is an assessment of the accumulation of, and interrelationship between effects might affect the environment, economy or community as a whole. The requirement for an applicant to carry out a Cumulative Effects Assessment (CEA) is addressed in Article 4(3) and Article 5(1) of the *European Commission (EC) Directive 2014/52/EU*. This is implemented into UK law through the *Town and Country Planning (Environmental Impact Assessment) Regulations 2017*.

The airport's CEA is set out in chapter 18 of their ES. Its scope and structure accords with the EIA Regulations 2017 and The Planning Inspectorate (PINS) '*Cumulative effects assessment relevant to nationally significant infrastructure projects*' 2019 (referred to as 'PINS advice'). Although the PINS advice applies to nationally significant infrastructure projects, it does not exclude environmental impacts from smaller projects. PINS advice sets out a 4-stage process for CEA's.

BAL has followed this process and examine '*Inter-project effects*' and '*inter-related effects*' of the proposed development. For inter-project effects, BAL examine how different effects within the same topic, for example construction noise from the proposed development and noise from another development source near to the airport, might combine to increase the sum of the impact of different receptors. For inter-related effects BAL examine how different topics, such as landscape impacts arising from the proposed development which might not be significant to different receptors, but when combined with other environmental impacts, could have more significant impacts. Officers consider this is an acceptable approach.

Stage 1 of PINS advice requires developers to agree a Zone of Influence (Zoi) for a CEA. They advise that this should be proportionate to the projected environmental impacts arising from the development, and that 'other' development contributing to a cumulative impact should be those that are likely to have a significant material impact. This should take account of scale, types of impacts, duration and whether this will coincide with the timing of the proposed development.

Table 18.1 of the ES and the accompanying narrative sets out the rationale for the 'Zoi'. For most topics this is limited to impacts within a maximum range of 15km of BA (some topics are less), although operational impacts such as aircraft noise is increased up to 25km. Economic impacts are also acknowledged by BAL to be greater than 15km, although other developments affecting cumulative impacts were limited to those projected to provide 1000+ jobs or 1000+ dwellings. Officers consider the Zoi is proportionate.

BAL say their long-list of 'other developments' with the potential to contribute to significant cumulative environmental impacts only considers 'major development' as defined in the *Town and Country Planning (Development Management Procedure) (England) Order 20155* Part 1, Article 2(1). This identified 110 'other developments' including those in North Somerset, Bristol and BANES. Most are residential developments, although some are residential with mixed uses, with others comprising educational, industrial, medical and transport developments including a proposed railway station at Portishead. The sites are within a 3–10km of BA.

PINS advice includes guidance on which 'other developments' should be considered in the final 'short' list. This applies a 'Tier 1-3' approach, with Tier 1 being those developments that are most certain to occur, and Tier 3 are least certain. Tier 1 developments include those that are permitted and under construction: development which is permitted but have not yet commenced; and development proposals under consideration. Tier 3 includes development identified in a development plan or emerging development plan, where such development is reasonably likely to come forward. PINS advice says: *"it is important not to exclude consideration of effects deemed individually not significant from the CEA, since the cumulative effect of a number of non-significant effects could in itself be significant"*. BAL follow this approach in their CEA.

In stage 2 of the CEA process, BAL apply the Tier 1-3 sifting process and reduce 'other developments' to 45 sites. These are listed in Appendix 18B of the ES. This includes five strategic development sites which had been identified in the *West of England Joint Spatial Plan (JSP)*, comprising mixed-use led housing sites at Weston-super-Mare ('Parklands' and 'Haywood Village') and the so-called 'garden villages' at Backwell, Banwell, Churchill and Nailsea respectfully. With the Council's withdrawal from the JSP, the Council is starting to prepare a new North Somerset Plan to identify future growth areas. It cannot be said at this stage which development locations will be identified and which would come forward in the expected timeframe of BA increasing from 10-12 mppa (2021-2026). Outstanding developments from the 10 mppa permission and 'permitted development' schemes at BA are also included. Officers are satisfied that BAL have fulfilled stages 1 and 2 of the CEA process.

In stage 3, BAL examine the likelihood of CEA in terms of:

- The duration of the effect;
- The extent of the effect;
- The type of effect;
- The frequency of effect;
- The value and resilience of the receptor affected; and
- The likely success of incorporated mitigation.

BAL confirm its method for gathering information on these sites. This accords with PINS advice and officers consider this acceptable.

BAL's conclusions from its assessment (stage 4 of the CEA process) are summarised in the following pages together with the officers' comments.

Socio-Economics

The expected jobs yield from the proposed development and wider GVA is set out in 'Issue 3'. Officers consider this represents a significant benefit. BAL consider the projected job creation (where available) from 'other developments' from their short list and this is set out in table 18.4 of the chapter 18 of the ES. The cumulative effect on employment generation is considered to be positive by officers, while the potential for negative effects caused by labour shortages are considered neutral and not significant. No further mitigation is required.

Greenhouse Gas Emissions and Climate Change

Whilst all 'other developments' in the short-list will contribute to climate change through GHG emissions, the receptor is global and thus is affected by global developments and policy. The assessment of significance so far as the proposed development is concerned

is based on emissions from UK aviation sector and UK carbon budgets, and its impact on the UK's ability to meet its climate change obligations. This is a proportionate approach. Since no other aviation-related developments are identified in the short list there are no cumulative effects to consider.

Noise and Vibration

The sum of projected noise impacts from the proposed development will not be added to by other development at BA and no additional mitigation is required. For other non-airport development, BAL contend that the most likely source of additional noise or vibration impact is from construction and construction traffic. However, since the closest major development is approximately 3.1 KM from BA, no significant cumulative construction noise and vibration is expected (and this is well outside the 'Zol' for noise and vibration). Officers agree with this conclusion.

Air Quality

BAL say many 'other developments' will generate additional road traffic during both construction and operation, which may cause cumulative effects in combination with the proposed development. They say additional traffic growth from 'other developments' has been accounted for in the modelling of traffic and thereby considered in the main air quality assessment. No new receptors have been identified where the effects of the proposed development are likely to be significant in isolation, or in combination.

Officer agree with this and consider that the proposed development is unlikely to contribute materially to a significant cumulative effect, and no additional mitigation is required beyond that set out in the recommended conditions and S106 obligations.

Traffic and Transport

The methodology used to determine future traffic flows in the TA includes the accumulation of the proposed development and other developments. The impacts and mitigation are therefore based on a CEA. Officers agree and mitigation are set out in recommended conditions and S106 obligations.

Green Belt

As far as officers are aware no 'other developments' are in the Green Belt. To that extent, the impact is limited to the proposed development in this application and the effect of this is set out in 'Issue 12' of this report.

Landscape and Visual Impacts

BAL say that 'other developments' have greater potential to contribute to cumulative landscape effects upon the Mendip Hills AONB due to their proximity to its boundary. This included a strategic residential development at Churchill (which formed part of the JSP), and residential developments at Sandford and Winscombe. These developments would also have localised impacts on landscape character and appearance. In comparison BAL contend that their proposed development has the potential to have small-scale and incremental adverse effects upon three of the 12 special qualities of the AONB (outward views; dark skies and tranquillity), and its landscape effects that will be minor and not significant.

Their reason for this is that it is highly unlikely that there will be any locations in the AONB where the presence of one or more of the three proposed residential developments and their proposed development will be "simultaneously discernible". They also contend that other components of the 10 mppa permission yet to be implemented would not

cumulatively have significant adverse impacts on landscape character and appearance including the AONB. BAL qualify this by referring to the likely impacts from different public viewpoints.

It is agreed that the potential visual and landscape impacts from the proposed development at BA is unlikely to add significantly to a cumulative impact at individual locations that were considered in the LVIA considered in Issue 13 of this report. Some elevated locations in the AONB could however include some near range views on new housing at Churchill with the airport being seen at a much greater distance in the wider landscape setting. Collectively this has some potential to cause cumulative adverse impacts, albeit the contribution from BAL's proposed development at this range is likely to be minor.

It is considered that the cumulative impact of inter-project effects at BA including the visual impacts of physical development proposed in this application and other approved development in the 10 mppa permission (most notably MSCP2) could combine to have greater visual impacts at some locations near to the airport. The cumulative impacts do not however change the conclusions that the accumulated impact of the development on landscape character and appearance is minor to moderate. No further mitigation is required.

Biodiversity

BAL consider other developments and assess their combined impacts during construction and operation. They contend that all of these other developments are either of a sufficiently small scale; far enough away from BA; or required to adhere to the 'North Somerset and Mendips Bat Special Area of Conservation (SAC) Supplementary Planning Document' (SPD) such that inter-project significant effects with the proposed Development are unlikely to arise.

'Issue 14: Biodiversity' of this report includes a cumulative biodiversity assessment. This looked at over 20 development sites. It is concluded that the proposals, alone or in combination with other plans and projects, would have no adverse effect on integrity of the North Somerset and Mendip Bats SAC, subject to appropriate mitigation measures that are proposed in this application. No other significant cumulative biodiversity impacts are expected, and no further mitigation is required.

Surface Water and Flood Risk

A range of environmental measures will be incorporated to minimise the impacts of the proposed development on the aquatic environment, water resources and flood risk effects for the duration of the construction and the operational phase. These are required to limit impacts within the site and their effect on the wider surface water and flood risk network. They say this will not be significantly affected by other proposed development, at BA and at other locations. The recommended planning conditions provide adequate mitigation.

Land Quality

All shortlisted developments have been scoped out of the inter-project CEA for land quality based on their distance from the proposed development as it is unlikely that there would be any credible pollutant linkage and potential effects that could combine. So far as other developments at the airport, subject to construction management controls, there is no reasons to conclude any significant environmental impacts would arise. The recommended conditions would provide adequate mitigation.

Historic Environment

Proposed development within the airport and other developments will not cause harm to heritage assets. No mitigation is necessary.

Public Health and Wellbeing

The cumulative noise assessment ('Issue 5') concludes that the cumulative noise level experienced at any receptor will be to the loudest individual noise source affecting that location (whether that is air, ground, traffic or construction noise), and this will not be increased by a combination of different noise sources. The noise assessment results show that the change in noise level is expected to be no more than 2 dB(A) at all sources. This is not a significant change and it is unlikely that noise impacts on health and wellbeing will be affected by a cumulative noise assessment.

In terms of air pollution, BAL say that this decreases rapidly with distance from the source, so the combined effects from the proposed development and other projects is unlikely to be significant in terms of health and wellbeing. Further mitigation beyond that set out in the recommended conditions and S106 agreement is not required.

Cumulative traffic impacts during the construction and operational phase of the proposed development takes account of predicted growth arising from other development. Measures in the proposed CEMP and other mitigation in the recommended conditions and S106 agreement are considered sufficient to minimise any adverse effects on health and wellbeing.

BAL contend the 'other developments' contribute to lasting visual change to the landscape of North Somerset, which may affect local identity. Although few views are likely to take in multiple projects, collectively the projects may contribute to the perception of a more developed landscape, particularly where located in previously undeveloped areas. This is accepted.

The collective employment and investment of the proposed development as well as other projects in North Somerset (and the wider regions of South West England and south-east Wales) would be expected to be beneficial for population health if the local community take advantage of the opportunities and the quality of local employment is improved into the long-term. The level of socio-economic benefits arising from the proposed development are beneficial and significant.

Since BAL did their CEA some other sites, mainly residential have come forward, including a planning appeal that was allowed for up to 450 dwellings at Youngwood Lane, south west Nailsea. This would add to the quantum of total housing development that is potentially deliverable within the timeframe of the BAL's proposed development, although not significantly relative to the sum of housing included in the short-list. This would not have any tangible bearing on the conclusions reached in this report.

Conclusions

The CEA is based on a precautionary and pragmatic approach, that is centred around the best available evidence that can be used to establish baseline data for determining cumulative environmental impacts. Some of the topics featured in the CEA, including transport and biodiversity, carry out their own cumulative impact assessments. The 'Zol' and qualitative assessment of the types, duration, frequency and value of the CEA is robust, reflecting best practice in PINS advice. From this, it is not considered that cumulative impacts give rise to further significant environmental effects and no further

mitigation beyond that set out in the recommended conditions and S106 agreement is required.

Issue 24: Summary and Planning Balance

National aviation policy including the 'Aviation Policy Framework' 2013 (APF); 'The future of UK aviation: next steps towards an aviation strategy 2018'; and 'The future of UK aviation: making best use of existing runways' 2018, all support the increased use of existing runway capacity at UK airports. National policy also highlights the positive impacts that new and more frequent flights, especially international connections, can have in boosting the economy.

The Aviation National Policy Statement also suggests that the importance of aviation to the UK economy will only increase following the UK leaving the EU. The NPPF advises that significant weight should be placed on the need to support economic growth and productivity *"taking into account both local business needs and wider opportunities for development"*. Having regard to this, the assumptions and benefits, made in the application have been considered in depth and further information and qualification was received as a result. Officers, assisted by independent consultants, consider that whilst some level of displacement of passengers and gross economic impacts would arise as a result of the proposed development, even with this reduction, the proposal would still achieve substantial economic benefits. Optimising the economic benefits will however require additional funding from BAL to enhance skills, employment and job opportunities during the construction and operational phases of the proposed development and this forms part of the proposed S106 agreement. The projected economic benefits arising from the proposed development is a matter of significant weight in favour of the application.

National and local policy, including the APF, 'Making Best Use of existing runways' and policy CS23 of the Core Strategy, is however clear in that economic benefits should be weighed against environmental impacts. The range of environmental impacts arising from the proposed development is broad and complex. The key environmental issues are greenhouse gas emissions and their impacts on climate change; transport and highway impacts; parking; noise; air quality; landscape and visual impacts, flood risk, biodiversity and public health and wellbeing. The impact of the development on the Green Belt is also significant.

The single most recurring comment from objectors to this application is that the proposal will result in a significant increase in greenhouse gas emissions (GHG) at a time when these should be reduced to help reverse the impacts of climate change. The recent change to the Climate Change Act established a legally binding UK target to reduce GHG's by at least 100% ('Net Zero') in 2050 from 1990 levels. The Committee on Climate Change (CCC) has issued guidance and technical reports in recent months, which provide an overview of the challenges and broad approach to reach 'net zero'. They indicate that new government policies will set out how 'Net Zero' will be achieved. New UK aviation policy is expected to be released this year (2020) but in the meantime decisions should be made on the basis of current policy. The CCC report outlines different scenarios to achieve net zero and recommends an annual UK aviation carbon target of 37.5MtCo2. This has not been translated into policy to date.

The applicant uses up-to-date best practice to quantify the added carbon emissions arising from the proposed development and different sources and then assess their impact

against UK carbon budgets. Officers are satisfied that the level of additional carbon emissions resulting from the proposed development is not significant against these budgets and are unlikely therefore to compromise the UK's ability to meet its climate change obligations.

Policies CS1 and CS2 of the Core Strategy (CS) require applicants to implement measures to reduce, as far as practical, their carbon footprint. The airport address this through a draft scope of a '*Carbon and Climate Change Action Plan for growth to 12 mppa*' (CCCAP). This proposes actions to enable the airport to achieve carbon neutral growth from 2025. It includes GHG management of ground-based operations, greater use of sustainable technologies and carbon off-setting, so far as operations in their direct control are concerned. These measures are considered acceptable in principle, although further details will need to be set to show how this will be achieved.

Some objectors say this should be resolved before the application is decided, but it is considered that planning conditions are appropriate to deal with the detailed elements of the CCCAP. The proposed development has been assessed in terms of its vulnerability to the effects of climate change and the risks arising from this are low. Should the application be approved by the Council, it will not compromise the ambition to make North Somerset carbon neutral by 2030 which will be led by the Council. Overall, on the basis of current policy, it is concluded that the impact of the proposal on climate change is not unacceptable and the proposal meets the requirements of policies CS1 and CS2 of the North Somerset Core Strategy and paragraphs 8, 148 and 150 of the NPPF.

Noise impacts arising from the proposed development are a significant concern to people within and beyond North Somerset. Their main objection is that that more flights will cause more frequent and greater noise disturbance and this will adversely affect public health during the day and especially at night. The application assesses the projected noise impacts using the LAeq (*equivalent continuous A-weighted sound pressure level over a defined period of time*) noise metric. This accords with current policy. The SoNA report 2017 and Green Paper 'Aviation 2050' also suggest this is the appropriate way to assess and mitigate aviation noise. The noise assessment is however supplemented with other noise indices: an approach supported in the APF.

In terms of noise, Regulation 598-2014 requires decision makers to apply a 'balanced approach'. The noise impacts and mitigation have been considered in accordance with policy in the NPPF; ANPS; 'Making best use of existing runways'; the APF; NSPE and the development plan. In this context, particular regard has been given to the main objective of the NPSE "*to avoid, minimise, mitigate and where possible reduce significant adverse impacts on health and quality of life.*" The APF sets out thresholds for considering noise insulation schemes and the sensitivity of noise at night.

The submitted noise assessment projects that that the number of properties in daytime noise contours 54-63dB LAeq 16h inclusive do not increase between 10 mppa (2021) and 12 mppa (2026). These contours are above the Lowest Observed Adverse Effect Level (LOAEL) up to the Significant Observed Adverse Effect Level (SOAEL). The projected results for the LAeq 8hr night-time period (23:00 to 07:00 hours) show a small reduction in the number of properties in the 48-55db inclusive noise contours (above the LOAEL and up to the SOAEL) at 12 mppa in 2026 compared with 10 mppa (2021).

These results rely on a progressive increase in quieter aircraft operating at Bristol Airport

(BA) between 2021 and 2026, which is consistent with the increasing introduction of quieter aircraft in airline fleets. Without the proposed development there would however be a larger reduction in the size of day and night time noise contours between 10 mppa in 2021 and 10 mppa in 2026 due to the technical advances leading to an increase in quieter aircraft in the future. This emphasises the effect of quieter aircraft operating in 2026. The methodology used to ascertain the noise results is acceptable and the results are accepted.

The number of people susceptible to sleep disturbance between 10 and 12 mppa will reduce, based on the prescribed (annual) methodology to assess this. Notwithstanding this, the projected noise impacts arising from the proposal still have a clear potential to cause unacceptable harm to health and quality of life. It is considered however that this can be mitigated to acceptable levels through operational restrictions. Planning conditions can be imposed to: (1) lower the optimum level of noise from aircraft types (in terms of 'Effective Perceived Noise Decibels') permitted to fly between 23:30-06:00 Hours and (2) retaining the current quota count regime and total points for the BST and BWT with a phased reduction of the transfer of unused quota count points between season. This will require quieter aircraft to operate during core night time hours. The number of permitted flights per annum during the 'shoulder periods (23:00 to 23:30 Hours and 06:00 to 07:00 Hours) can also be reduced from 10,500 in the 10 mppa permission down to 9,500. These restrictions are considered to strike an acceptable balance between mitigating harm and not imposing unworkable operating restrictions on the airport operator: an approach set out in paragraph 182 of the NPPF.

An improvement to the current acoustic grant scheme will also be secured which is compliant with current and emerging policy. Planning obligations which require air and ground operational procedures to reduce ground and air noise in accordance with best practice can also be secured through a S106 agreement. An environmental construction management plan can be secured through planning conditions to reduce noise from construction. Subject to these conditions and obligations, there is no objection to the proposed development in terms of noise impacts. This aspect of the proposal therefore complies with EU Regulation 598-2014 and noise policy in the NPPF; ANPS; 'Making best use of existing runways'; the APF; NSPE and the development plan.

In terms of the proposed development within the Green Belt, the physical and operational impacts of the highway works, and alterations to the aircraft taxiways would not harm the openness of the Green Belt or conflict with the purposes of including land inside the Green Belt. The year-round use of the seasonal car park and additional surface car park are however 'inappropriate' development in the Green belt, which are harmful to the Green Belt by definition.

The applicant has demonstrated that additional car parking is an essential part of the proposed development once public transport use has been maximised. Furthermore, the sequential search has demonstrated that there are no other reasonably available and suitable sites that could accommodate the additional car parking demand outside the Green Belt, save for the limited amount of additional car parking to be provided in the part of the airport outside the Green Belt (the Green Belt Inset – GBI). From the information submitted, it is concluded that 'very special circumstances' do exist for these car parks being in the Green Belt and these clearly outweigh the harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal.

For air quality, there are no predicted exceedances of the annual mean air quality objectives for PM10 and PM_{2.5}. For nitrogen dioxide (NO₂) all but two receptors locations are expected to incur increased concentrations, but the projected levels remain below the air quality objective. In terms of Local Air Quality Management, all receptors comply with acceptable levels, although some are close to these limits. To ensure this remains the case, ongoing monitoring will be required together with an air quality action plan to improve air quality. This can be secured through a S106 agreement. Subject to this, there is no objection to the proposed development in terms of air quality, which complies with Policy CS3 of the North Somerset Core Strategy, the relevant legislation and other policy including the NPPF and APF. There is no objection to the application in terms of its potential impact on vibration.

Transport impacts have been assessed in terms of surface access, traffic levels and impacts, highway works and parking. The surface access strategy is centred on optimising the number of passengers and staff who travel to and from the airport by public transport. There is some criticism from objectors that the proposals to improve public transport services are not ambitious enough, but a 2.5% increase in passengers using public transport (PT) between 10 and 12 mppa is considered ambitious and realistic. A PT modal share target of 30% for all employees by 12 mppa is also achievable, but this will take funding, incentives, monitoring, responsive actions and ongoing commitment to achieve this. This can be secured through a planning obligation.

Despite the above, the majority of added passengers who travel to the airport will do so by car. This adds to the volume of traffic on approach roads. This is intensified on main routes which converge near to the airport, but the impact would be more dispersed at a greater distance. Technical analysis, including capacity assessments on key junctions, has identified a need to improve some road junctions to mitigate the expected traffic impacts of the development. BAL will be required to fully fund this work which also includes road improvements between the main roundabout access and Downside Road and West Lane. These improvements are considered to be proportionate with the extra impacts arising from the proposed development. They are technically acceptable and would improve traffic flows close to the airport. Separate improvements are also required at the A38/J22 (M5), albeit these are not required until passenger numbers reach 11 mppa. Traffic queues also form at times on the internal road network at the airport. The alterations in this application which involves a new loop road and revised egress on to the A38 roundabout would improve traffic flows and circulation at the airport and make for improved connection to the main carriageway.

Some objectors suggest the decision from BAL not to increase staff parking relative to 700 additional jobs expected by 12 mppa is impractical. Furthermore, it is suggested that not relocating some existing staff parking spaces to the north side of the airport would result in unsustainable travel in terms of increased journey distances and times. It is considered however that these measures are needed to make car travel less appealing which should result in more sustainable travel choices. It does however emphasise the importance of early new investment in public transport services being made should planning permission be granted.

Despite improvements in public transport services, and projected increases in the proportion of passengers travelling to and from the airport by public transport up to 12 mppa, this will not prevent an increase in private travel and an increased demand for passenger car parking. BAL have demonstrated an initial case for approximately 3,200 additional spaces, although further travel data in the future may support a case for up to

3,900 spaces. This will be contingent on further studies from BAL should permission be granted. The need for some additional car parking at an early phase of growth is not unreasonable, but this will need to be managed so that it does not prejudice increased public transport growth and usage. Increased car parking will need to be phased and this can be dealt with through planning conditions. In parallel with this, unofficial car parking at various sites near to the airport, and parking/waiting of vehicles at the roadside, laybys and verges in communities near to the airport has been commonplace for some time. The S106 agreement would include financial contributions to assist management of off airport parking.

Overall, the projected impacts of the proposed development in terms of optimising use of public transport; impacts on roads and junctions; the extent of road works and parking measures are considered acceptable subject to planning obligations and planning conditions as set out in this report. Subject to this, the proposed development is acceptable having regard to policy CS10, DM24 and paragraphs 103, 108, 109, 110 and 111 of the NPPF.

The scope and methodology used in BAL's Landscape and Visual Impact Assessment are acceptable. The character of the landscape at and near to the airport has, for many years, has been influenced by the appearance and other environmental impacts of the airport including noise and transport. The physical impact of the additional building works, including extra car parking and lighting, are likely therefore to have only a modest impact on the landscape character.

The visual impacts on the landscape are also expected to be minor in the main, with few localised impacts, such as the highway alterations and the proposed multi storey car park (MSCP), having moderate effects. These effects will be reduced with additional soft landscaping which can be secured through planning conditions. There are therefore no objections to the proposal in terms of its impacts on landscape character and visual impacts. The proposal complies with policies CS5, DM10 and DM11 and paragraphs 109 and 115 of the NPPF.

For biodiversity, extensive site surveys have been submitted. The most significant impact is the removal of feeding and foraging bat habitats. Replacement mitigation through the enhancement and management of woodland is proposed together with new planting at the airport. The biodiversity value of this is expected to enhance the bat habitat. This is recognised in the Habitat Regulations Assessment (HRA) process which has been agreed with Natural England. There are no adverse biodiversity impacts arising from the application, subject to planning conditions. The proposed development complies with policies CS4, DM8 and DM9 and section 15 of the NPPF.

There are no adverse flood risk impacts and the proposed surface water and foul water drainage proposals are acceptable, albeit that final technical details will be required under planning conditions. This complies with policy CS3 of the CS3 and DM1. There are no unacceptable land quality or heritage related impacts, and the proposal accords with policies CS3, CS5, DM4, 6 and 7 respectively as well as paragraphs 118, 170, 179 and 189-202 of the NPPF.

While the siting of all proposed development is fixed in the application, most other elements such as scale, design, materials and landscaping are set aside as 'reserved matters'. The extensions to the passenger terminal are however fully detailed and these elements would integrate successfully with the current building. Indicative details of the

eastern walkway, pier and MSCP are provided. Officers are also content that the scale, position and use of these buildings would not be over-bearing from within or outside the airport, nor have unacceptable impacts on the living conditions of nearby residents. The appearance and design of the proposed development are acceptable having regard to policies CS1, CC2, CS5 and CS12 of the Core Strategy and DM2, DM10, DM32 and DM33 of the DMP.

Public health and wellbeing has been considered in consultation with Public Health England (PHE). It is concluded that the proposals do not give rise to additional impacts that need to be mitigated.

The interactive and cumulative impacts assessment has been carried out in accordance with appropriate legislation and guidance and the range of 'other development' that might contribute to combined effects is acceptable. The sum of this would not give rise to additional significant environmental impacts and the mitigation that is set out in the recommended conditions and S106 agreement are sufficient. The expected environmental outcomes from the proposed development including those related to surface access; highway works; parking delivery and enforcement; air and ground noise; air quality; community and employment are also considered to acceptable subject to mitigation proposed through the recommended conditions and S106 agreement.

Conclusion

For the reasons, set out in the report, the application is recommended for approval subject to referral to the Secretary of State and to a S106 agreement as set out in Appendix 3 and conditions.

RECOMMENDATION:

Subject to:

(a) the referral of the application to the Secretary of State under the Town and Country Planning (Consultation) (England) Direction 2009;

(b) The completion of a section 106 legal agreement securing:

- A new Airport Surface Access Strategy
- Improvements to Passenger Travel including new and improved public transport services with key performance indicators
- New Staff Travel Plan
- Ultra-Low Emission Strategy
- Delivery of Public Transport Interchange
- Multi-Modal pricing review
- Phased delivery of additional car parking
- Local parking controls
- Highway Improvement Fund
- Delivery of off-site highway works
- Review of Drop Off Zone Charges
- Air Noise control scheme
- Enhanced Noise Insulation Scheme
- Ground Noise Management Strategy

- Air Quality Action Plan
- Airport Environmental and Amenity Improvement Fund
- Skills and Employment Plan

the application be **APPROVED** (for the reasons stated in the report above) subject to the following conditions and any other additional or amended conditions as may be required in consultation with the Chairman and Vice Chairman:

Standard Outline Conditions

1. Any application for the approval of reserved matters made pursuant to this planning permission shall be made to the Local Planning Authority before the expiration of 8 years from the date of this permission.
Reason: To comply with Section 92 of the Town and Country Planning Act 1990.
2. The development hereby permitted shall be begun either before the expiration of 8 years from the date of this permission, or before the expiration of 2 years from the date of approval of the last reserved matter to be approved, whichever is the later.
Reason: To comply with Section 92 of the Town and Country Planning Act 1990.

Approved Documents

3. The development hereby permitted shall be carried out in strict accordance with the following plans and particulars:
 - 17090-00-100-400 Location (Red Line) Plan
 - 17090-00-100-401 Composite Site Plan
 - 17090-00-100-402 Site Reference Plan
 - 17090-00-100-403 Existing Site Plan
 - 17090-00-100-404 Existing Site Plan – North
 - 17090-00-100-405 Existing Site Plan - Central
 - 17090-00-100-406 Existing Site Plan - South
 - 17090-00-100-407 Proposed Site Plan
 - 17090-00-100-408 Proposed Site Plan - North
 - 17090-00-100-409 Proposed Site Plan - Central
 - 17090-00-100-410 Proposed Site Plan - South
 - 17090-00-100-411_02 Permitted Development Rights Reference Site Plan
 - 17090-00-200-400_00 Ground Floor Plan - Existing
 - 17090-00-200-401_0 Ground Floor Plan – Proposed
 - 17090-10-200-400_00 First Floor Plan – Existing
 - 17090-10-200-401_00 First Floor Plan - Proposed
 - 17090--10-200-400_00 Basement Floor Plan - Existing
 - 17090--10-200-401_00 Basement Floor Plan - Proposed
 - 17090-20-200-400_00 Mezzanine Floor Plan – Existing
 - 17090-20-200-401_00 Mezzanine Floor Plan - Proposed
 - 17090-ZZ-125-400_00 Roof Plan – Existing
 - 17090-ZZ-125-401_00 Roof Plan – Proposed
 - 17090-ZZ-300-400_00 South Terminal Extension & B1, B2 and B3 – Existing Elevations (Sheet 1 of 2)

- 17090-ZZ-300-401_00 South Terminal Extension & B1, B2 and B3 – Proposed Elevations (Sheet 1 of 2)
- 17090-ZZ-300-402_00 South Terminal Extension & B1, B2 and B3 – Existing Elevations (Sheet 2 of 2)
- 17090-ZZ-300-403_00 South Terminal Extension & B1, B2 and B3 – Proposed Elevations (Sheet 2 of 2)
- 17090-ZZ-300-404_00 West Terminal Extension – Existing Elevations
- 17090-ZZ-300-405_00 West Terminal Extension – Proposed Elevations
- 17090-ZZ-300-406_00 Terminal Canopies – Existing Elevations
- 17090-ZZ-300-407_00 Terminal Canopies – Proposed Elevations
- 40506-Bri075c Integrated/embedded Landscape, Visual and Ecology Mitigation Masterplan
- C1124-SK-A38-010 11.0 A38 Junction Improvements – Option 10
- C1124-SK-A38-011 1.0 A38 Junction Improvements – Vehicle Track Analysis 1 of 3
- C1124-SK-A38-012 1.0 A38 Junction Improvements – Vehicle Track Analysis 2 of 3
- C1124-SK-A38-013 1.0 A38 Junction Improvements – Vehicle Track Analysis 3 of 3

Documents

- Planning Statement (including Bristol Airport Forecast Validation) – December 2018
- Environmental Statement (including Flood Risk Assessment) – December 2018
- Design and Access Statement – December 2018
- Consultation Feedback Report – November 2018
- Economic Impact Assessment – November 2018
- Transport Assessment – December 2018
- Draft Workplace Travel Plan – December 2018
- Parking Demand Study – December 2018
- Parking Strategy – December 2018
- Foul and Surface Water Drainage Strategy – December 2018
- Lighting Impact Assessment – December 2018
- BREEAM Pre-Assessment – November 2018
- Response to Request for Further Information Pursuant to Regulation 25 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 - April 2019
- Response to Request for Further Information Pursuant to Regulation 25 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 - October 2019
- Response to North Somerset Council Highways and Transport Comments – December 2019
- Response to Further Environment Agency Comments – December 2019.

Reason: To ensure that the development accords with the approved details and that any subsequent changes are subject to the permission of the Local Planning Authority.

Passenger Cap

4. The passenger throughput at Bristol Airport shall not exceed 12 million passengers in any 12-month period (to be taken from 1st January to 31st December in any calendar year unless a different 12-month start, and end date is agreed with the Local Planning Authority).

Reason: To ensure that the environmental, traffic and community impacts that would arise from the development as identified in the 'Environmental Statement' and supporting planning documents submitted with the application are not increased without a proper and formal process to consider any future increase in passenger numbers, in terms of the likely significant impacts and mitigation.

East Pier and Walkway

5. Details of reserved matters comprising the external appearance; scale; building materials; existing and proposed finished levels and layout of the new east pier walkway (Site 'G' on Site Reference Plan – Drawing Number 17090-00-100-402) hereby permitted shall be submitted to and approved by the Local Planning Authority. Development at Site 'G' shall not commence until these reserved matters have been approved. This development shall be carried out as approved.

Reason: The application was submitted as an outline application in accordance with the provisions of Article 5 of the Town and Country Planning (General Management Procedure) Order 2015 and in accordance with Policy DM32 of the North Somerset Council Sites and Policies Plan Part 1.

6. Details of reserved matters comprising the external appearance; scale; building materials; existing and proposed finished levels; and layout of the new east pier (Site 'H' on Site Reference Plan – Drawing Number 17090-00-100-402) hereby permitted shall be submitted to and approved by the Local Planning Authority. Development at Site 'H' shall not commence until these reserved matters have been approved. This development shall be carried out as approved.

Reason: The application was submitted as an outline application in accordance with the provisions of Article 5 of the Town and Country Planning (Development Management Procedure) Order 2015 and in accordance with Policy DM32 of the North Somerset Council Sites and Policies Plan Part 1.

Service Yard

7. Details of reserved matters comprising the external appearance; landscaping; scale; existing and proposed finished levels; layout; and access of the service yard (Site 'D' on Site Reference Plan – Drawing Number 17090-00-100-402) hereby permitted shall be submitted to and approved by the Local Planning Authority. Development at Site 'D' shall not commence until these reserved matters have been approved. This development shall be carried out as approved.

Reason: The application was submitted as an outline application in accordance with the provisions of Article 5 of the Town and Country Planning (Development Management Procedure) Order 2015 and in accordance with Policy DM32 of the North Somerset Council Sites and Policies Plan Part 1.

Multi-Storey Car Park 3 (MSCP3)

8. Details of reserved matters comprising the external appearance; building materials; landscaping; layout; scale; existing and proposed finished levels; and access of MSCP3 (Site 'A' on Site Reference Plan – Drawing Number 17090-00-100-402) hereby permitted shall be submitted to and approved by the Local Planning Authority. The details referred to in this condition shall include measures to reduce noise from vehicles parked and moving within the car park. Development at Site 'A' shall not commence until these reserved matters have been approved. This development shall be carried out as approved.

Reason: The application was submitted as an outline application in accordance with the provisions of Article 5 of the Town and Country Planning (Development Management Procedure) Order 2015 and in accordance with Policy DM32 of the North Somerset Council Sites and Policies Plan Part 1.

Extension to 'Silver Zone' Car Park

9. Details of reserved matters comprising the external appearance; landscaping; scale; existing and proposed finished levels; layout; and access of the extension to the Silver Zone car park (Site 'M' on Site Reference Plan – Drawing Number 17090-00-100-402) hereby permitted shall be submitted to and approved by the Local Planning Authority. Development at Site 'M' shall not commence until these reserved matters have been approved. The development shall be carried out as approved.

Reason: The application was submitted as an outline application in accordance with the provisions of Article 5 of the Town and Country Planning (Development Management Procedure) Order 2015 and in accordance with Policy DM32 of the North Somerset Council Sites and Policies Plan Part 1.

Internal Roads including 'Gyratory'

10. Details of reserved matters comprising the external appearance; landscaping; scale; existing and proposed finished levels; and layout of the internal road layout including gyratory road and associated surface car parking (Site 'N' on Site Reference Plan – Drawing Number 17090-00-100-402) hereby permitted shall be submitted to and approved by the Local Planning Authority. Development at site 'N' shall not commence until these reserved matters have been approved. This development shall be carried out as approved.

Reason: The application was submitted as an outline application in accordance with the provisions of Article 5 of the Town and Country Planning (Development Management Procedure) Order 2015 and in accordance with Policy DM32 of the North Somerset Council Sites and Policies Plan Part 1.

East Taxiway Link

11. Details of reserved matters comprising the external appearance; scale; existing and proposed finished levels; and layout of the east taxiway link hereby permitted (Site 'K' on Site Reference Plan – Drawing Number 17090-00-100-402) shall be submitted to and approved by the Local Planning Authority. Development at Site 'K' shall not commence until these reserved matters have been approved. This development shall be carried out as approved.

Reason: The application was submitted as an outline application in accordance with the provisions of Article 5 of the Town and Country Planning (Development Management Procedure) Order 2015 and in accordance with Policy DM32 of the North Somerset Council Sites and Policies Plan Part 1.

Taxiway 'Golf'

12. Details of reserved matters comprising the external appearance; scale; existing and proposed finished levels; and layout of Taxiway Golf - widening and fillets (Site 'J' on Site Reference Plan – Drawing Number 17090-00-100-402) - hereby permitted shall be submitted to and approved by the Local Planning Authority. Development at Site 'J' shall not commence until these reserved matters have been approved. This development shall be carried out as approved.

Reason: The application was submitted as an outline application in accordance with the provisions of Article 5 of the Town and Country Planning (Development Management Procedure) Order 2015 and in accordance with Policy DM32 of the North Somerset Council Sites and Policies Plan Part 1.

Acoustic Barrier

13. Details of reserved matters comprising the scale; layout; and appearance of the acoustic barrier (Site 'P' on Site Reference Plan – Drawing Number 17090-00-100-402) hereby permitted shall be submitted to and approved by the Local Planning Authority. Development at Site 'P' shall not commence until these reserved matters have been approved. This development shall be carried out as approved.

Reason: The application was submitted as an outline application in accordance with the provisions of Article 5 of the Town and Country Planning (Development Management Procedure) Order 2015 and in accordance with Policy DM32 of the North Somerset Council Sites and Policies Plan Part 1.

Construction Environmental Management Plan

14. Prior to the commencement of the first component of the development hereby permitted, a site-wide Construction Environmental Management Plan (CEMP) shall be submitted to and approved in writing by the Local Planning Authority. Where required, a CEMP shall also be submitted for each individual component of the development hereby permitted prior to the construction of that component and be aligned with the site-wide CEMP. The site-wide and component CEMPs as submitted shall include:
- a) A construction traffic management plan including details of the routes and vehicle entrance routes into the airport to be used by contractors' vehicles moving to and from the site (and the appropriate signage thereof);
 - b) Details of measures to minimise noise, dirt, dust (and other air borne particles) and vibration during construction;
 - c) A pollution prevention and emergency response plan;
 - d) A water management plan;
 - e) A waste management plan;
 - f) An invasive weeds management plan;
 - g) A soil management plan; and
 - h) Proposed working hours, including any night-time working hours;

Items (a) to (h) referred to above shall be the subject of auditing and reporting by the applicant and / or site contractors and these records shall be kept up to date and supplied to the Local Planning Authority upon request. The development shall be carried out in accordance with the approved CEMP.

Reason: To reduce the impact of construction on nearby residents and the local environment in accordance with Policies CS3, CS4 and CS7 of the North Somerset Core Strategy and Policy DM8 of the North Somerset Sites and Policies Plan Part 1.

Carbon and Climate Change Action Plan (CCCAP)

15. In this condition:

‘CCCAP’ means a plan of deliverable measures together with a timetable and programme to implement these measures with the purpose to reduce and offset greenhouse gas emissions from airport activities and ensure the airport's resilience to the effects of climate change.

‘Airport activities’ means, for the purpose of the CCCAP, the activities controlled by Bristol Airport Limited or its successors, giving rise to scope 1 and scope 2 carbon dioxide emissions as defined in guidance on how to measure and report greenhouse gas emissions published by the Department for Environment Food and Rural Affairs in September 2009 or such amended guidance as may apply from time to time in future years.

Within 12 months of the grant of this permission, a CCCAP shall be submitted to the Local Planning Authority for approval. This shall include:

- (i) a baseline against which carbon management initiatives can be measured;
- (ii) the scope of greenhouse gas reduction / management being agreed;
- (iii) a timetable with targets for carbon management being agreed for each element within the agreed scope under point (ii);

An annual report shall be submitted to the Local Planning Authority as part of the Airport Operational Monitoring Report that sets out progress made against agreed targets, including an independent third-party review and recommendation for reviewing targets where deemed necessary. Alternative action measures shall be agreed with the Local Planning Authority if the review shows that the CCCAP is not meeting previously agreed targets.

Reason: To ensure that the development mitigates, and is resilient to, the effects of climate change in accordance with Policies CS1, CS2 and CS3 of the North Somerset Council Core Strategy.

Air Noise

- 16.** The area enclosed by the 57dB(A) $L_{Aeq, 16hr}$ (07:00 hours - 23:00 hours) contour, when calculated and measured by the Aviation Environmental Design Tool (AEDT) Version 2.0d (or as may be amended) over a 92-day period between 16th June and 15th September shall not exceed 11.5 km² using the standardised average mode from the date of grant of this permission. Forecast aircraft movements and

consequential noise contours for the forthcoming year shall be reported to the Local Planning Authority annually within the Annual Operations Monitoring Report.

Reason: To reduce the impacts of aircraft noise in accordance with policies CS3 and CS23 of the North Somerset Core Strategy and Policy DM50 of the North Somerset Council Sites and Policies Plan Part 1.

17. The area enclosed by the 63, 60 and 57dB(A) $L_{eq, 16hr}$ (07:00 hours to 23:00 hours) contours and the 55 dB $LA_{eq, 8hr}$ summer night time contour (23:00 hours to 07:00 hours) for the forthcoming year shall be reported to the Local Planning Authority annually within the Annual Operations Monitoring Report

Reason: To ensure that the size of these noise contours and the numbers of properties and people is regularly reported so that the noise impacts of Bristol Airport's growth can be identified, and noise mitigation can be applied.

Night Flying:

18. (a) In this condition and the three following conditions:

"airport manager" means the person (or persons) for the time being having the management of Bristol Airport or persons authorised by such person or persons;

"maximum certificated weight" means the maximum landing weight or the maximum take-off weight, as the context may require, authorised in the certificate of airworthiness of an aircraft;

"designated aerodromes" means by virtue of the Civil Aviation (Designation of Aerodromes) Order 1981(a) Heathrow Airport - London, Gatwick Airport London and Stansted Airport - London ('the London Airports') are designated aerodromes for the purposes of Section 78 of the Civil Aviation Act 1982 ('the Act');

"quota" means the maximum permitted total of the quota counts of all aircraft taking off from or landing at Bristol Airport in question during any one season between 23.30 hours and 06.00 hours, and

"quota count" means the amount of the quota assigned to one take-off or to one landing by any such aircraft, this amount being related to its noise classification as specified below;

"the summer season" means the period of British Summer Time in each year as fixed by or under the Summer Time Act 1972, and

"the winter season" means the period between the end of British Summer Time in one year and the start of British Summer Time in the year next following.

- (b) For the purpose of this condition:

(i) the noise classification of any aircraft shall be that set out as per those defined for designated aerodromes;

(ii) subject to paragraph (i) and (iii), the quota count of an aircraft on take-off or landing shall be calculated on the basis of the noise classification for that aircraft on take-off or landing, as follows:

Noise Classification	Quota Count
Aircraft below 81 EPNdB	0
Aircraft between 81.83.9 EPNdB	0.125
Aircraft between 84-86.9 EPNdB	0.25
Aircraft between 87-89.9 EPNdB	0.5
Aircraft between 90-92.9 EPNdB	1
Aircraft between 93-95.9 EPNdb	2
Aircraft between 96-98.9 EPNdB	4
Aircraft between 99-101.9 EPNdb	8
Aircraft greater than 101.9 EPNdB	16

(iii) Exempt aircraft are –

those jet aircraft with a maximum certificated weight not exceeding 11,600 kg,

those aircraft, which, from their noise data, are classified at less than 81 EPNdB shall not count towards the quota.

(c) For the purposes of this condition, an aircraft shall be deemed to have taken off or landed at the time recorded by the Air Traffic Control Unit of Bristol Airport.

(d) This condition shall take immediate effect at the start of the first full season (being the winter season or the summer season) following the commencement of development. Subject to the following provisions of this condition, the quota for the summer season shall be 1260, and the quota for the winter season shall be 900.

(e) An aircraft with a quota-count of 2 or above shall not:

(i) be scheduled to take off or land during the period 23.00 hours to 06.00 hours;

(ii) be permitted to take off during the period 23.00 hours to 06.00 hours except in circumstances where: it was scheduled to take off prior to 23.00 hours; and take-off was delayed for reasons beyond the control of the air traffic operator.

(f) An aircraft shall not be permitted to take off or be scheduled to land during the period 23:30 hours to 06:00 hours where:

(i) the operator of the aircraft has not provided (prior to its take-off or prior to its scheduled landing time as appropriate) sufficient information (such as aircraft type or registration) to enable the airport manager to verify its noise classification and thereby its quota count; or

(ii) the operator claims that the aircraft is an exempt aircraft, but the aircraft does not, on the evidence available to the airport manager, appear to be an exempt aircraft.

(g) If any part of that quota remains unused in any one season, the amount of the shortfall up to a maximum of 10% shall be added to the quota for the subsequent season.

(h) The 10% value expressed in (g) shall be reduced on a progressive basis in accordance with the following schedule:

Timeline	% Quota Maximum carry-over allowance from un-used quota points from the preceding season only
In the first 2 seasons which begin 12 months after the commencement of development.	8%
In the 2 seasons which begin 2 years after the commencement of development.	6%
In the 2 full seasons which begin 3 years after the commencement of development.	4%
In the 2 full seasons which begin 4 years after the commencement of development.	2%
In the 2 full seasons which begin 5 years after the commencement of development.	0%. This is then retained in perpetuity

(i) An aircraft shall not be permitted to take off or be scheduled to land during the period 23.00 hours to 07.00 hours where:

(i) the operator of the aircraft has not provided (prior to its take-off or prior to its scheduled landing time as appropriate) sufficient information (such as aircraft type or registration) to enable the airport manager to verify its noise classification and thereby its quota count; or

(ii) the operator claims that the aircraft is an exempt aircraft, but the aircraft does not, on the evidence available to the airport manager, appear to be an exempt aircraft.

(j) This condition shall not apply to any take-off or landing, which is made:

(i) where the airport manager decides, on reasonable grounds, to disregard for the purposes of this condition a take-off or landing by a flight carrying or arriving to collect cargoes, such as medical supplies, required urgently for the relief of suffering, but not cargoes intended for humanitarian purposes where there is no special urgency;

(ii) where the airport manager decides to disregard for the purposes of this condition a take-off or landing in any of the following circumstances:

- delays to aircraft, which are likely to lead to serious congestion at the aerodrome or serious hardship or suffering to passengers or animals;

- delays to aircraft resulting from widespread and prolonged disruption of air traffic;
- where an aircraft, other than an aircraft with a quota count of 4 or above, is scheduled to land after 06:30 hours but lands before 06:00 hours;

Provided that, for the avoidance of doubt, where an aircraft is scheduled to land between 06.00 hours and 06.30 hours but lands before 06.00 hours, that landing shall count towards the quota.

It shall be the duty of the airport manager to notify the Local Planning Authority in writing, within one month from it occurring, of any occasion (whether a single occasion or one of a series of occasions) to which this paragraph applies.

(k) This condition shall not apply to any take-off or landing which is made in an emergency consisting of an immediate danger to life or health, whether human or animal.

Reason: To ensure that the proposed development does not give rise to unacceptable levels of night noise in accordance with Policy CS3 of the North Somerset Core Strategy and Policy DM50 of the North Somerset Sites and Policies Plan Part 1.

19. The total number of aircraft movements at the airport including take-offs and landings between the hours of 23:30 hours and 06:00 hours for 12 months (for the avoidance of doubt this will be two adjoining seasons of Summer and Winter) shall not exceed 4000. For the purposes of this condition flights falling within the categories listed in condition 18 sub-clause j and k shall not be included. For clarity, a take-off or a landing shall comprise 1 movement.

Reason: To reduce the noise impact of night-time flights on the living conditions of residents in accordance with policies CS3 and CS23 of the North Somerset Core Strategy and Policy DM50 of the North Somerset Replacement Local Plan.

20. The total number of take-offs and landings between 06:00 hours and 07:00 hours and between 23:00 hours and 23:30 hours (the 'shoulder periods') shall not exceed 9,500 in any calendar year. For the purposes of this condition, flights falling within the categories listed in 18 sub-clause j and k shall not be included.

Reason: To reduce the noise impact of night-time flights on the living conditions of residents during the 'shoulder periods' in accordance with Policies CS3 and CS23 of the North Somerset Core Strategy and Policy DM50 of the North Somerset Sites and Policies Plan Part 1.

Ground Noise

21. Auxiliary Power Units shall not be used on stands 38 and 39 as shown on the approved plans between the hours of 23:00 and 06:00.

Reason: To reduce the noise impact of ground-based operations on the living conditions of residents and accordance with policies CS3 and CS23 of the North Somerset Core Strategy and Policy DM50 of the North Somerset Sites and Policies Plan Part 1.

Off-Site Highway Works

22. The highway improvements to the A38 and Downside Road and associated works to the West Lane junction (Site 'O' on Site Reference Plan – Drawing Number 17090-00-100-402) shall not begin until the following details have been submitted to and approved in writing by the Local Planning Authority:
- a) The existing and proposed finished surface levels of the carriageway and adjoining foot and cycle paths;
 - b) Clarification of all existing boundary walls, fences and other enclosures to be removed to make way for the highway works, together with details of their replacement in terms of the position, appearance, height and materials; and
 - c) Details of all retaining structures that are required to support the abutment between the highway works and adjoining land in terms of the location, height, and exterior materials for any surfaces of the retaining structures that are above ground.

The highway works shall be carried out in accordance with the approved details.

Reason: To ensure that full specifications of the highway works are provided including replacement boundary enclosures and retaining structures. This is in accordance with Policies CS10 and CS12 of the North Somerset Core Strategy and Policies DM24 and DM 32 of the North Somerset Sites and Policies Plan Part 1.

23. The passenger throughput at Bristol Airport shall not exceed 11 million passengers in any 12-month period (to be taken from 1st January to 31st December unless a different 12 month-start and end date is agreed) unless:
- i) a detailed scheme for improvement works at M5 junction 22/A38 Edithmead roundabout, comprising the full signalisation of the A38 Edithmead roundabout, have been submitted to and approved in writing by the Local Planning Authority (in consultation with the local Highway Authority and Highways England) and have been implemented in full and are open to traffic; or
 - ii) details of an alternative scheme, to ensure that the predicted traffic effects at M5 junction 22 caused by the development are mitigated to at least the same extent as scheme (i) have been submitted to and approved in writing by the Local Planning Authority (in consultation with the local Highway Authority and Highways England) and have been implemented in full and are open to traffic.

Reason: To ensure the safe and efficient operation of the Strategic Road Network and in accordance with paragraphs 102 and 108 of the National Planning Policy Framework.

Landscaping & Trees

24. For those components of the development hereby permitted where landscaping is a reserved matter, the development of each of those components shall not commence until full landscaping specifications for the relevant component have been submitted to and approved by the Local Planning Authority. This shall include:
- a) Existing and proposed finished ground levels;

- b) Existing trees, shrubs, hedges or other soft features to be removed and retained;
- c) Details of the location and type of tree protection measures;
- d) Planting plans, including specifications of species, sizes, planting centres, number and percentage mix of all new planting;
- e) Details of hard-landscaping;
- f) The location of any services;
- g) A management plan of the landscaping scheme, including maintenance details and a timescale for implementation of the planting.

The development shall be carried out in accordance with the approved landscape details.

Reason: To enhance the appearance of the development in accordance with Policy CS5 of the North Somerset Council Core Strategy and Policy DM10 of the North Somerset Council Sites and Policies Plan Part 1.

25. Details of the planting, ecology and management proposals for the numbered areas shown in the 'Integrated / embedded landscape, visual and ecology mitigation master plan (Drawing Number 40506-Bri075c), including a timetable for the implementation of each element, shall be submitted to and approved by the Local Planning Authority within 6 months of the construction of the first component of the development hereby permitted. The development shall be carried out in accordance with the approved details.

Reason: To ensure that the planting and / or management plans for each area are implemented in a timely manner and in accordance with Policies CS4 and CS5 of the North Somerset Core Strategy and Policies DM8 and DM10 of the North Somerset Sites and Policies Plan Part 1.

26. Any trees, shrubs or hedges (or part thereof) which comprise part of the scheme of landscaping and which within a period of 5 years from the date of planting die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with the same species, size and number unless otherwise agreed.

Reason: To ensure the longevity of the approved landscaping scheme in accordance with Policy CS5 of the North Somerset Core Strategy and Policy DM10 of the North Somerset Sites and Policies Plan Part 1.

27. Details to be submitted under condition 24 shall include the height, width, gradient and planting proposals of a landscape bund around the perimeter of the extension to the 'Silver Zone' car park (Site 'M' on the 'Site Reference Plan' – Drawing Number 17090-00-100-402 Rev 00). The landscape bund as approved shall be completed before the approved extension to the 'Silver Zone' car park (Site 'M') is brought in to use and it shall be maintained, as approved, thereafter.

Reason: To ensure that the development conserves and enhances landscape character and visual amenity in accordance with Policy CS5 of the North Somerset Council Core Strategy and Policies DM9 and DM10 of the North Somerset Council Sites and Policies Plan Part 1.

28. No development shall commence in respect of the off-site highway works (Site 'O' on Site Reference Plan – Drawing Number 17090-00-100-402) until a detailed Arboricultural Method Statement Report with Tree Survey and Tree Protection Plan, following the recommendations contained within BS 5837:2012, has been submitted to and approved in writing by the Local Planning Authority. The Arboricultural Method Statement Report shall include the control of potentially harmful operations such as site preparation (including demolition, clearance and level changes); the storage, handling and mixing of materials on site, location of site offices, service run locations including soakaway locations and movement of people and machinery. The report shall incorporate a provisional programme of works. Supervision and monitoring details by an Arboricultural Consultant and site visit records and certificates shall be provided to the Local Planning Authority. The Tree Protection Plan must be superimposed on a layout plan, based on a topographical survey, and exhibit root protection areas which reflect the most likely current root distribution, and reflect the guidance in the Arboricultural Method Statement Report. No development or other operations shall thereafter take place except in accordance with the approved details.

Reason: To ensure that trees to be retained are not adversely affected by the development, in the interests of the character and biodiversity value of the area, and in accordance with Policies CS4, CS5 and CS9 of the North Somerset Council Core Strategy, Policies DM8, DM9, DM10 and DM32 of the North Somerset Council Sites and Policies Plan Part 1 and the North Somerset Council Biodiversity and Trees Supplementary Planning Document.

Biodiversity

29. Prior to the commencement of the first component of the development hereby permitted (including demolition, ground works or vegetation clearance), a Biodiversity Construction Management Plan (BCMP) shall be submitted to and approved in writing by the Local Planning Authority. The BCMP shall include the following:
- i) A risk assessment of potentially damaging construction activities including enabling works and construction requirements (e.g. construction lighting, vehicle movements, etc).
 - ii) Identification of “biodiversity protection zones”.
 - iii) Practical measures to avoid, reduce or mitigate impacts on designated sites, habitats and protected and notable species during construction. This shall include a detailed updated survey and mitigation strategy for any badger setts within the footprint of the proposed works.
 - iv) The location and timings of sensitive works to avoid harm to biodiversity features, including details of timing and phasing to avoid impacts on horseshoe bats. This shall include details of the timing and phasing of vegetation removal to ensure that flight lines suitable for use by horseshoe bats are retained and details of construction lighting
 - v) The times during construction when specialist ecologists need to be present on site to oversee works.

vi) Responsible persons and lines of communication.

vii) The role and responsibilities on site of an ecological clerk of works (ECoW) or similarly competent person.

viii) Use of protective fences, exclusion barriers and warning signs, including protection of boundary features suitable for use by horseshoe bats.

The approved BCMP shall be adhered to at all times throughout the construction period unless otherwise agreed in writing by the Local Planning Authority.

Reason: To protect on-site and adjacent wildlife interest in accordance with the Conservation of Habitats and Species Regulations 2017, Wildlife and Countryside Act 1981 (as amended), the National Planning Policy Framework, Policy CS4 of the North Somerset Core Strategy and Policy DM8 of the North Somerset Sites and Policies Plan Part 1.

30. No development within the airfield grassland or the extension to the 'Silver Zone' car park (Site 'M' on the 'Site Reference Plan' – Drawing Number 17090-00-100-402 Rev 00) shall be commenced until full details of a Scheme of Grassland Mitigation and Translocation has been submitted to and approved in writing by the Local Planning Authority. These measures shall include:

- i) The aims and objectives of the mitigation measures and translocation scheme.
- ii) The location and details of a suitable receptor site(s) including details of ecological, hydrological and geological conditions at the existing areas of species-rich grassland and proposed receptor site.
- iii) A method statement for the grassland removal and translocation.
- iv) Full details of long-term management of the receptor site.
- v) Details of management and restoration of retained species-rich grassland elsewhere within the landholding.
- vi) Details of the persons responsible for the implementation of the scheme.
- vii) A timeframe for the scheme's implementation.
- viii) Measures for the monitoring of the scheme for a minimum period of ten years. The means of reporting the findings to the Local Planning Authority shall also be specified.

The agreed mitigation and translocation scheme and ongoing grassland management and monitoring shall be carried out as approved.

Reason. To ensure no net loss of Habitats of Principle Importance in accordance with the National Planning Policy Framework, Policy CS4 of the North Somerset Core Strategy and Policy DM8 of the North Somerset Sites and Policies Plan Part 1.

31. Prior to the commencement of any part of the extension to the 'Silver Zone' car park (Site 'M' on the 'Site Reference Plan' – Drawing Number 17090-00-100-402 Rev 00) or the approved highway works at the A38 / Downside Road / West Lane (Site 'O' on Site Reference Plan – Drawing Number 17090-00-100-402), a Biodiversity

Mitigation and Management Plan (BMMP) that accords with the document titled: '*Integrated / embedded Landscape, Visual and Ecology Mitigation Masterplan*' Wood Consultants (August 2019) and Chapter 11 of the 'Environmental Statement', shall be submitted to, and approved in writing by, the Local Planning Authority in consultation with Natural England. The BMMP shall include the following.

- i) Description and evaluation of on-site features to be managed.
- ii) Description of the off-site features to be managed including replacement habitat for horseshoe bats as detailed in *Outline SAC/SPD Ecological Management Plan for North Somerset and Mendip Bat SAC SPD* (Johns Associates, 2018).
- iii) Details of the extent and location of habitat retention, creation and enhancement measures.
- iv) Ecological trends and constraints that might influence management.
- v) Aims and objectives of management.
- vi) Appropriate management options for achieving aims and objectives.
- vii) Prescriptions for management actions.
- viii) The timescales for implementation of the BMMP, demonstrating that replacement horseshoe bat habitat will be available before suitable on-site habitat is removed, disturbed or otherwise negatively impacted in accordance with the North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development: Supplementary Planning Document (Adopted January 2018).
- ix) A work schedule (including an annual work plan capable of being rolled forward over a ten-year period and recommendation for ongoing review).
- x) Details of the body or organisation responsible for managing the day-to-day implementation of the plan.
- xi) Ongoing monitoring and remedial measures including a monitoring schedule for the off-site replacement habitat for horseshoe bats as detailed in *Outline SAC/SPD Ecological Management Plan for North Somerset and Mendip Bat SAC SPD* (Johns Associates, 2018). The means of reporting the findings to the Local Planning Authority and Natural England shall also be specified.

The BMMP shall also include details of the legal and funding mechanism(s) by which the long-term implementation of the plan will be secured by the developer, detailing responsibility for its delivery. The plan shall also set out contingencies and/or triggers and options for remedial action to ensure that it delivers the fully functioning biodiversity objectives of the originally approved scheme. The approved plan will be implemented in accordance with the approved details.

Reason: To provide appropriate replacement habitat for horseshoe bats in accordance with North Somerset and Mendip Bats Special Area of Conservation

(SAC) Guidance on Development: Supplementary Planning Document (Adopted January 2018) and overall no net loss and net ecological gain in accordance with Policy CS4 of the North Somerset Core Strategy and Policy DM8 of the North Somerset Sites and Policies Plan Part 1.

32. No additional or revised external lighting of any type shall be installed until a detailed external lighting design strategy has been submitted to and approved in writing by the Local Planning Authority. The lighting strategy shall be consistent with the framework provided in the: '*Lighting Impact Assessment*' (Hydrock, December 2018) and '*Lighting Impact Assessment - Additional Study*' Document C-09194_P01 (Hydrock 2019), including measures to ensure light spill onto habitats suitable for horseshoe bats is below 0.5 lux. The detailed strategy shall include:
- i) Identification of areas/features on site that are sensitive for bats;
 - ii) Details of the type, number, location and height of the proposed lighting, including lighting columns;
 - iii) Existing lux levels affecting the site;
 - iv) The predicted lux levels; and
 - v) Lighting contour plans

All external lighting shall be installed in accordance with the specifications and locations set out in the strategy, and these shall be maintained thereafter in accordance with the strategy. No other external lighting shall be installed without prior consent from the local planning authority.

Reason: To protect horseshoe bat habitat in accordance with the Conservation of Habitats and Species Regulations 2018 and to ensure the conservation and enhancement of biodiversity in accordance with Policy CS4 of the North Somerset Core Strategy and Policy DM8 of the North Somerset Sites and Policies Plan Part 1.

Ground Water Quality

33. Prior to the commencement of the first component of the development hereby permitted, full details identifying the monitoring, mitigation and reporting of groundwater levels and groundwater quality during the construction of the development hereby approved shall be submitted to and approved in writing by the Local Planning Authority. These details shall identify the groundwater monitoring to be implemented to measure any impacts on groundwater that might result from the development approved. Monitoring protocols shall be agreed with the Local Planning Authority, as well as reporting frequencies and triggers that will be implemented should contaminants be observed. The development shall be carried out in accordance with the approved details.

Reason: To prevent the increased risk of flooding, to improve water quality and to prevent pollution of the water environment in accordance with Policy CS3 of the North Somerset Core Strategy and DM1 of the North Somerset Sites and Policies Plan Part 1.

Ground Contamination

34. Prior to the commencement of each individual component of the approved development, a site investigation of the relevant related area shall take place to confirm ground conditions and identify any existing contamination. If contamination is present, a remediation strategy shall be developed before development of the relevant component commences. If remediation is required, it shall be subject to verification to confirm that the land is suitable for use for the relevant component. A site investigation strategy, site investigation report, remediation strategy and remediation verification report for the relevant component shall be provided in writing to the Local Planning Authority and Environment Agency prior to the construction phase of the relevant component commencing. Development of each individual component shall be carried out in accordance with the requirements of the relevant approved reports.

Reason: To reduce the potential of ground contamination adversely affecting the safety of the development or adversely affecting ground conditions including the water environment in accordance with Policy CS3 of the North Somerset Core Strategy.

Surface Water Drainage

35. The surface water drainage works required for each component of the development shall be implemented in accordance with details that have first been submitted to and approved in writing by the Local Planning Authority. The development of each component shall not take place until the details for that component have been approved. Before these details are submitted, an assessment shall be carried out of the potential for disposing of surface water by means of a sustainable drainage system in accordance with the principles set out in the National Planning Policy Framework, associated Planning Practice Guidance and the non-statutory technical standards for sustainable drainage systems, and the results of the assessment provided to the Local Planning Authority. Where a sustainable drainage scheme is to be provided, the system shall be designed such that there is no flooding for a 1 in 30-year event and no internal property flooding for a 1 in 100-year event + 40% allowance for climate change

The submitted details shall:

- a) Provide information about the design storm period and intensity, the method employed to delay and control the surface water discharged from the site (taking into account long-term storage and urban creep) and the measures taken to prevent pollution of the receiving groundwater and/or surface waters; and
- b) Include a timetable for its implementation.

Reason: To reduce the risk of flooding to the development from surface water/watercourses, and in accordance with the National Planning Policy Framework, Policy CS3 of the North Somerset Council Core Strategy and Policy DM1 of the North Somerset Council Sites and Policies Plan Part 1.

36. Prior to the commencement of each individual component of the approved development, details of a sustainable surface water drainage system for that

component together with a programme of implementation and maintenance for the lifetime of that component shall be submitted to and approved by the Local Planning Authority. Works shall be carried out in accordance with the approved details.

Reason: To ensure that the development is served by a satisfactory system of surface water drainage and in accordance with the National Planning Policy Framework and Policy CS3 of the North Somerset Core Strategy.

37. Prior to the commencement of each individual component of the approved development details of infiltration testing for that component shall be carried out to confirm or discount the suitability of the site for the use of infiltration as a drainage element, with the submitted Flood Risk Assessment (FRA) updated accordingly. The results should conform to BRE Digest 365 where trial pits are allowed to drain three times and the calculation of soil infiltration rates is taken from the time taken for the water level to fall from 75% to 25% effective storage depth. Details should also be submitted demonstrating that sufficient surface water storage can be provided on-site. Should infiltration prove not to be feasible during the detailed design stage, details of an alternative drainage strategy to be used shall be submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details.

Reason: To demonstrate whether or not the site is suitable for use of infiltration as part of the drainage strategy in accordance with Policy CS3 of the North Somerset Council Core Strategy.

38. Class 1 interceptors shall be installed by the developer in all new areas of development where re-fuelling activities take place. These shall be of sufficient size to intercept and contain the maximum hydrocarbon/chemical loss that could occur as a result of a release from a fuel supply lorry or release from an aircraft plus 10-20%. Details shall be agreed in writing with the Local Planning Authority.

Reason: To prevent pollution of the water environment in accordance with Policy CS3 of the North Somerset Council Core Strategy.

Foul Drainage Details

39. Prior to the commencement of each individual component of the approved development (where relevant), details of a foul water drainage scheme for that component including a timetable for its implementation, shall be submitted to and approved in writing by the Local Planning Authority. Development of each individual component shall be carried out in accordance with the approved details.

Reason: To ensure that the foul drainage scheme is acceptable in accordance with Policy CS3 of the North Somerset Core Strategy and Policy DM1 of the North Somerset Sites and Policies Plan Part 1.

Sustainable Design

40. Development of the west and south passenger terminal extensions shall not commence until a design stage certificate (with interim rating if available) has been submitted to the Local Planning Authority indicating that the west and south terminal extensions can achieve the stipulated final BREEAM level. A final certificate certifying that a BREEAM (or any such equivalent national measure of sustainable building which replaces that scheme) rating of at least 'Very Good' has been

achieved shall be submitted to the Local Planning Authority within 3 months of the occupation of the terminal extensions, unless the Local Planning Authority agrees in writing to an extension of the period by which a certificate is issued.

Reason: To ensure that the development meets the appropriate BREEAM standards as required by Policies CS1 and CS2 of the North Somerset Council Core Strategy.

41. The extensions to the passenger terminal hereby approved shall not be occupied until the measures to generate 15% of the on-going energy requirements of the use of the building (unless a different standard is agreed) through micro renewable or low-carbon technologies have been installed and are fully operational. Thereafter, the approved technologies shall be permanently retained unless otherwise agreed in writing by the Local Planning Authority.

Reason: To secure a high level of energy saving by reducing carbon emissions in accordance with policies CS1 and CS2 of the North Somerset Core Strategy and Policy DM6 of the North Somerset Sites and Policies Plan Part 1.

42. No low-carbon or renewable energy infrastructure shall be installed or erected until details of their scale, design, colour and location have been submitted to and approved by the Local Planning Authority. The provision for renewable energy or low-carbon generation shall be carried out as approved.

Reason: To ensure that the appearance and noise impacts of any provision for renewable energy or low-carbon generation are acceptable and in accordance with Policies CS1, CS3, CS4, CS5 and CS12 of the North Somerset Core Strategy and Policies DM8, DM10 and DM32 of the North Somerset Sites and Policies Plan Part 1.

Annual Operations Monitoring Report

43. An Annual Operations Monitoring Report shall be submitted to the Local Planning Authority no later than 31 May each year. The Report should provide statistical information on the operational activities which occur at Bristol Airport and associated monitoring of environmental performance covering:
- the number of passengers per annum;
 - the number of night time flights per annum;
 - the number of flights in the shoulder period per annum;
 - the quota count score for the preceding British Summer Time and British Winter Time respectively

Reason: To ensure that the operational impacts of the development are regularly monitored and reported.

Airport Operational Boundary

44. Notwithstanding the provisions of the Town and Country Planning (General Permitted Development) Order 2015, or any order amending or revoking and re-enacting that Order, no development, other than that authorised by this planning permission, shall take place outside the 'Operational Boundary' or within the operational boundary on land to the east side of the A38 as shown in Drawing Number 17090-00-100-411 Rev O without the permission, in writing, of the Local Planning Authority.

Reason: The Local Planning Authority wishes to retain control over further development on land that is outside of the 'Airport Operational Boundary' and inside the Green Belt as shown in Drawing Number 17090-00-100-411 02 in order to maintain the integrity and appearance of this land and in accordance with Policy CS6 of the North Somerset Core Strategy and Policy DM50 of the North Somerset Sites and Policies Plan Part 1.

Building Materials

45. Sample panels of the exterior walling and roofing materials to be used in respect of the extensions to the passenger terminal (Sites 'C' and 'E' on the 'Site Reference Plan' – Drawing Number 17090-00-100-402 Rev 00), the new walkway /piers (Sites 'G' and 'H' on the 'Site Reference Plan' – Drawing Number 17090-00-100-402 Rev 00) and MSCP3 (Site 'A' on the 'Site Reference Plan' – Drawing Number 17090-00-100-402 Rev 00) hereby granted, shall be submitted to and approved in writing by the Local Planning Authority before work on these elements commences. The development shall be carried in accordance with the approved materials, unless otherwise authorised in writing by the Local Planning Authority.

Reason: To ensure that the materials to be used are acceptable and in accordance with Policy CS12 of the North Somerset Core Strategy and Policy DM23 of the North Somerset Sites and Policies Plan Part 1

Definitions

In these conditions the term 'component' refers to the following physical elements of the development hereby permitted:

- Multi-storey car park 3 (MSCP3) (Site 'A' on Site Reference Plan – Drawing Number 17090-00-100-402)
- West terminal extension (Site 'C' on Site Reference Plan – Drawing Number 17090-00-100-402)
- Service yard (Site 'D' on Site Reference Plan – Drawing Number 17090-00-100-402)
- South terminal extension (Site 'E' on Site Reference Plan – Drawing Number 17090-00-100-402)
- East pier walkway (Site 'G' on Site Reference Plan – Drawing Number 17090-00-100-402)
- East pier (Site 'H' on Site Reference Plan – Drawing Number 17090-00-100-402)
- Taxiway Golf - taxiway widening and fillets (Site 'J' on Site Reference Plan – Drawing Number 17090-00-100-402)
- East taxiway link (Site 'K' on Site Reference Plan – Drawing Number 17090-00-100-402)
- Extension to the Silver Zone car park (Site 'M' on Site Reference Plan – Drawing Number 17090-00-100-402)
- Internal roads including gyratory (Site 'N' on Site Reference Plan – Drawing Number 17090-00-100-402)
- Acoustic barrier (Site 'P' on Site Reference Plan – Drawing Number 17090-00-100-402)

APPENDIX 1

Table of Abbreviations

The following table is a key to abbreviations and acronyms used in the report.

AAP	Action Area Plan
ACP	Airspace Change Proposals
AMS	Airspace Modernisation Strategy
ANPS	Airports National Policy Statement
AONB	Area of Outstanding Natural Beauty
APF	Aviation Policy Framework
APU	Auxiliary Power Unit
AQAL	Air Quality Assessment Level
ASAD	Aviation Security in Airport Development
ASAS	Airport Surface Access Strategy
ATM'S	Air Traffic Movements
BA	Bristol Airport
BAL	Bristol Airport Limited
BALPA	British Air Line Pilots Association
BANES	Bath and North East Somerset Council
BCC	Bristol City Council
BEIS	Department for Business, Energy & Industrial Strategy
BMV	Best and Most Versatile Agricultural Land
BREEAM	Building Research Establishments Environmental Assessment Method
BST	British Summer Time
BWT	British Winter Time
CAA	Civil Aviation Authority
CESAP	Climate Emergency Strategy & Action Plan (for North Somerset)
CCA	Climate Change Act
CCC	Committee on Climate Change
CCCAP	Carbon and Climate Change Action Plan
CCD	Climb, Cruise and Descent
CEA	Cumulative Effects Assessment
CEMP	Construction Environmental Management Plan
CIL	Community Infrastructure Levy
COPD	Chronic Obstructive Pulmonary Disease
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
CPRE	Campaign for the Protection of Rural England
CS	North Somerset Core Strategy
DALY	Disability-Adjusted Life Year
DAS	Design and Access Statement
dB	Decibels
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DMP	Development Management Policies (Sites and Policies Plan – Part 1)
EA	Environment Agency

EASA	European Safety Aviation Agency
EIA	Environmental Impact Assessment
EMEP	European Monitoring and Evaluation Programme
EMF	Electromotive Force
EPS	European Protected Species
ES	Environmental Statement
ETS	Emissions Trading Scheme
EU	European Union
FDI	Foreign Direct Investment
FEGP	Fixed Electrical Ground Power
FRA	Flood Risk Assessment
FTE	Full-Time Equivalent (jobs)
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GB	Green Belt
GBI	Green Belt Inset
GHG	Greenhouse Gases
GPU	Ground Power Unit
GVA	Gross Value Added
GVLIA	Guidelines for Landscape and Visual Impact Assessment
HE	Highways England
HIA	Health Impact Assessment
HRA	Habitats Regulations Assessment
IAQM	Institute of Air Quality Management
ICAO	International Civil Aviation Organisation
J21	Junction 21 (M5 Motorway)
JLTP	Joint Local Transport Plan
JSP	Joint Spatial Plan (West of England)
JTS	Joint Transport Strategy
KT	Kilo Tonnes
LCA	Landscape Character Assessment
LEMP	Landscape and Ecological Management Plan
LGW	London Gatwick Airport
LHR	London Heathrow Airport
LOAEL	Lowest Observed Adverse Effect Level
LNR	Local Nature Reserve
LPA	Local Planning Authority
LQA	Land Quality Assessment
LTO	Landing and Take-Off
LVIA	Landscape and Visual Impact Assessment
MOVA	<i>Microprocessor Optimised Vehicle Actuation</i>
MPPA	Million Passengers Per Annum
MSCP	Multi-Storey Car Park
MT	Metric Tonnes
NCA	National Character Area
NE	Natural England
NERC	Natural Environmental and Rural Communities
NEF	New Economics Foundation
NOEL	No Observed Effect Level
NO ₂	Nitrogen Oxide
NPCU	National Planning Casework Unit
NPPF	National Planning Policy Framework
NPSE	Noise Policy Statement for England

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NSC	North Somerset Council
NSLCA	North Somerset Landscape Character Assessment
PCAA	Parish Councils Airport Association
PDS	Parking Demand Study
PHE	Public Health England
PINS	Planning Inspectorate
PIR	Passive Infrared
PM	Particulate Matter
PPG	Planning Practice Guidance
P&R	Park and Ride
PROW	Public Right of Way
PT	Public Transport
S106	Section 106 (Legal Agreement)
SAC	Special Area of Conservation
SAP	North Somerset Site Allocations Plan
SCI	Statement of Community Involvement
SGC	South Gloucestershire Council
SOAEL	Significant Observed Adverse Effect Level
SONA	Survey of Noise Attitudes (CAA 2017)
SM	Scheduled Monument
SPA	Special Protection Area
SPD	Supplementary Planning Document
SO ₂	Sulphur Dioxide
SOS	Secretary of State
SSSI	Sites of Special Scientific Interest
TA	Transport Assessment
TRO	Traffic Regulation Order
UAEL	Unacceptable Adverse Effect Level
UK	United Kingdom
UAEL	Unacceptable Adverse Effect Level
ULEV	Ultra-Low Emission Vehicle
WECA	West of England Combined Authority
WHO	World Health Organisation
ZOI	Zone of Influence

APPENDIX 2 - SUMMARY OF REPRESENTATIONS

As of 27 January 2020, 7,632 representations have been received. This includes 5,250 objections and 2,382 in support of the proposal.

Wrington Parish Council

Objects for the following reasons. Also supports arguments made by the PCAA.

Proposals affect all surrounding parishes. More flights adding to vehicular traffic, ground and air noise and pollution would have an unacceptable effect on residents' health and quality of life, biodiversity and landscape, including the loss of Green Belt meadowland. Mitigation cannot sufficiently off-set these impacts.

Background

Christmas timing of submission allowed little time to scrutinise highly technical information. Planning Statement contains inaccuracies, including description of local geography and the extent/layout of the airport site. It is economical with the facts. No independent verification of BA's consultation responses summary, passenger growth forecasts or claimed economic contribution.

Room exists for expansion at the under-utilised Cardiff airport, 1 hour away by car and increasingly attractive now Severn Bridge tolls discontinued.

Policy

Application is not sustainable development. Conflicts with the NPPF:

- planning should support the transition to a low carbon future and take climate change into consideration (para. 148)
- the natural local environment should be contributed to and enhanced, including protecting and enhancing valued landscapes, biodiversity, and preventing new development from contributing to levels of noise pollution (para. 170)
- planning decisions should mitigate and reduce to a minimum potential adverse impact resulting from noise and avoid noise giving rise to significant adverse impacts on health and quality of life (para. 180).

Aviation Policy Framework refers to regional airports' contributions as "important" – not "vital" as claimed. Government wants best use made of existing airport capacity. It does not advocate, or support expansion plans at regional airports. Application should be refused because the cap of 10 mppa has not yet been reached. To reach it will meet the Green Paper's proposition to make best use of runways and facilities, and it will serve the air quality strategy 2019 to protect health, and furthermore help meet the still soft legal commitments on climate change.

Green Paper is a material consideration. It supports growth in a sustainable way, mitigating environmental impacts. Targets set by BA in their application fall short of Green Paper expectations.

Demand forecasts

Compare BA's 20-year air passenger forecast figures with those from International Air Transport Association (2018), which predicts a European average growth rate of 2%. BA has not offered substantive evidence to support its predicted numbers. The failure rate of low-cost airlines, on which it is dependent, should be factored-in.

Socio-economic impact

Claimed benefits are grossly inflated, unsubstantiated and unjustified. UK tourism deficit is 13.4m visitors and £9.2bn. BA figures show 6.3m people leaving and only 700,000 tourists coming in to travel the UK (not specifically the south-west). This also implies a loss of tax revenue. BA profits go to Canada. The south-west only receives increased pollution and noise. These impose costs on the NHS and on individuals whose lives may be at greater risk and cut short.

WoE Strategic Economic Plan 2015-2030 sets out a vision for economic growth managed sustainably to benefit those within the sub-region and protect/enhance the environment. Despite BA's close involvement with the Local Economic Partnership, this vision fails to accord with BA's aspirations. The Plan's action points relating to the airport are meaningless in relation to this application.

Independent analysis questions claimed economic benefits. Impacts on biodiversity and landscape cannot be monetised. Claims that connectivity is important are unsubstantiated. More aviation activity in a region is followed by more economic activity. Whether this is true causation, an agglomeration effect or whether both are caused by a third factor has yet to be proven.

Operational boundary

Opposes extension of the boundary as unjustified. Extending permitted development rights would reduce local input into BA's growth aspirations. Would also, by freeing BA from many Green Belt limitations, be contrary to CS6, which indicates that NSC does not support changes to the Green Belt boundary.

Design

There are 1m discrepancies in the heights stated for MSCPs and the wind turbines on their roofs. If they are indeed a total of 31m above ground level, the turbines would be intrusive and detrimental to the Green Belt, AONB and Downside Road residents. Photovoltaic cells could be considered instead.

Landscape and visual impact

The LVA Assessment notes impact on tranquillity, dark skies and outward views. Traffic alone (air traffic and local vehicular) is predicted to rise by 50%, so cannot conclude 'negligible impact'. BA is certainly not "rarely visible". Landscape and visual mitigation is inadequate. A period of 15 years may not be accepted as being of a 'temporary' significance.

Parking and Green Belt

Approach to Green Belt parking relies on past precedent and would create a future precedent. Cannot be reconciled with promoting alternative modes of travel. BA has not complied with the 2011 requirement to build two MSCPs. BA's pricing policy favours low-cost surface parking and leads to under-use of other airport facilities. Cannot conclude that more low-cost parking would lessen unauthorised sites if BA prices remain higher. BA rejects further multi-deck car parking on visual grounds yet proposes intrusive rooftop wind turbines. Scope exists for further additional north side parking to maximise use of the inset as required by policy. With a stated south-north slope from terminal to northern boundary of 14.5m, at least a 'tier' of surface car parking could be added over that already in place at ground level. BA claims that the site would then be 'over-developed', but this is

preferable to using Green Belt. The south-north slope would also screen the increase in visual impact and reduce the impact on the view from the AONB.

To minimise emissions, buses for internal connections should be solely electric.

Off-site provision should be considered, e.g. proposed site near M5 Junction 21 (2,700 spaces). Would avoid using Green Belt and reduce air pollution impact of traffic growth around BA. Could lead to the reclaiming of some Green Belt already used for car parking and incentivise BA to deliver the MSCP spaces approved.

Biodiversity and light pollution

The Mendip Bats Special Area of Conservation SPD shows BA as a 'foraging area' for greater and lesser horseshoe bats. This document may not have received the requisite attention. Bat roost is some 2km west of BA and would be affected. Bat mitigation plans do not detail the 8ha of new woodland foraging area off-site. Is it genuinely additional? Replacement foraging areas can take years to establish and mature, which must be prior to loss of existing habitat. Badger setts were noted south of the airport perimeter. Have the badgers been re-settled?

Tall trees will not block light spill in winter, when artificial lighting will be more widely used. A survey needs to be repeated when the deciduous trees are not in foliage. At Cogloop, a full-time light level of 800lux immediately below the (formerly temporary) now to become permanent light is far too bright. Accepting that at 20m distant this drops to 0lx, a much lower level would be more invitational to retain foraging bats, for which light levels are critical. Mendip Bats SPD recommends a light level no more than 0.04lux. Existing hedges and other foraging areas should be retained until replacement hedges are mature. The commuting structure and the effect on prey species is acknowledged in the lighting assessment and therefore a proper, full season survey should be conditioned prior to any further intrusion into commuting/foraging routes south of Cogloop and a monitoring strategy conditioned to identify any negative effects.

Silver Zone lighting is highly visible, particularly in winter, impacting on the environment and ecology. Infra-red CCTV cameras would overcome the need for further lighting, as all cars would be valet block-parked. Ambient overspill illumination from Phase 1 will meet needs and not increase light spillage.

Noise and night flights

Arguments against increased noise pollution are selective in their evidence. Using averaged noise figures obtained from questionably sited receptors is inaccurate, unless maximum and minimum noise levels are also considered. Such figures are not submitted but should be available to assess accurately the current and forecasted impacts.

Proposals for night flying are ambiguously worded. More summer night flights would harm living conditions of residents. Other UK airports have stricter regulations on night flights than BA.

Alarms fitted to vehicles parked in the MSCP have caused noise nuisance. When triggered at night they continue for hours, resulting in sleep deprivation. Complaints to BA have not been addressed, nor is the nuisance addressed in expansion plans. Proposals for a 'transport hub' on the roof of one MSCP will also cause noise/light nuisance for residents.

Air quality

Air quality is of significant national and local importance to health and every effort should be made to reduce pollution from transport. Air quality assessment pre-dates this Government's Air Quality Strategy. Statements made by Wood are contradicted by the Strategy. Are we to assume that the criteria used by Wood will remain the same for future modelling of pollution and its effects? Will it demand more relevant placement of 'continuous air quality monitors' and collection of data using codified baselines for accurate predictions of pollution over a larger area, not just at local ground levels surrounding the site for transport hub development? Will such an EA contain epidemiological evidence related to spikes reflected in records of local inhabitants' cardiorespiratory history and treatment? Given that critical available met data, which is historic and independent, is easy to access, this air quality methodology is limited as it is in other respects. There are no correlations for flight schedules, day or night, Chapter ratings and emission values or that the summer of 2017 was hotter and dryer than normal, which gives rise to changed pollution characteristics. A 2017 baseline is not satisfactory.

No independent air quality tests by NSC have been conducted for 15 years. Annual mean levels of NO₂ should be replaced by the recording of spikes and median to low levels, better reflecting traffic flow, congestion, aircraft movements and resultant cumulative emission levels. Besides mean (i.e. average) figures, an accurate picture of air quality requires max/min figures, with durations, times and dates. Air quality monitors should be used more widely and in all surrounding residential areas. The pollution effects of expansion, monitored in a restrictive manner and area under review in this application, cannot give a true reflection of the greater impact of the move from 8.4 mppa to 12 mppa.

Dispersion of emissions is less at night. This is relevant if more summer night flights are permitted. Real-time software can provide accurate information.

NSC has a statutory duty to protect health and monitor air quality. It should consider the cost of placing more continuous monitors along more roads and in communities which will be impacted to a much higher degree, and the cost of epidemiological data collection and treatment of those in a region that already suffers a high national average for Chronic Obstructive Pulmonary Disease (COPD) and asthma. It should pay attention to transboundary impacts on Bristol and communities to the east and west and not confine deliberations to site specific air quality readings closer to Lulsgate found by Wood.

This air quality report uses modelling which does indicate moderate to high levels recorded closer to the site but there is nothing to equate expansion with a tangible calculation of reduction in emissions from aircraft and surface traffic, save for mitigation on site. Emission rates will increase significantly on site and further afield. If aircraft emissions at their peak are measured at take-off and particles from rubber on landing, do they remain within the confines of the ground monitors or do they gradually disperse with the westerly winds and collect towards Bristol? There is no recognition of transboundary impacts when the measurements are site specific. Airport-related air pollution could make urban air quality targets unattainable.

Air pollution will fall as acid rain.

According to the Government, cutting emissions would save £1.7 billion every year then £5.3 billion every year from 2030.

In the UK, more children suffer from respiratory conditions than anywhere else in Europe. Unicef is calling it a "public health emergency," and claims around one in three British children live in areas with unsafe levels of pollution.

Low-cost airlines do not renew their fleets as quickly or regularly as major operators, so fewer polluting aircraft will be introduced more slowly. More flights will counteract (and most likely exceed) any potential savings in emissions.

Climate change

Increased pollution will affect climate change and more than negate reductions elsewhere. BA aims to be carbon neutral by 2030, yet the relevant Action Plan to achieve neutrality will post-date any permission, denying meaningful public scrutiny. BA's own figures for projected carbon emissions conflict with JSP carbon reduction targets of 50% by 2030. Climate change impacts cannot be mitigated sufficiently from the proposals put forward.

Local councils have declared a 'Climate Emergency'. Bristol has done so despite its mayor supporting airport expansion on economic grounds.

BA can reduce air side emissions by for instance using electrical ground power eliminating the need for aircraft to run their on-board generators whilst on stand.

Surface access

No evidence that Workplace Travel Plan will have a significant effect on deprivation in WsM and south Bristol. If WsM provides 13% of BA's workforce positions and south Bristol 11%, where do the remaining 76% travel from? Is that really a significant impact on travel and congestion levels? The impact on so-called deprivation levels of respectively 100 and 90 extra jobs is hardly 'significant' and there is no justification to support the expectation that the anticipated new jobs will be filled from those areas' residents.

Claimed 2,976 full-time employees at BA include Bath Bus Company, First Bus and Arrow Cars. A further 919 of that total are aircrew of airlines based at BA. Only some 58% of FTE staff are at work on any one day. With an increase of 2mppa, a further 700 FTE staff will be needed, with therefore some 400+ FTE staff working each day, adding to pollution levels.

Public transport provision is not as extensive as described, as reference to routes and timetables will show. Little provision exists at night. If BA is so well served and acts as a 'hub', why do so few passengers use bus transport? Public transport use at 12.5% is below that predicted in 2009 and indicates no progress has been made in improving usage.

Cumulative impacts

Pollution, carbon emissions and noise disruption will all increase. With Bristol already one of the most polluted UK cities, this is unacceptable, scientifically and morally. S106 terms do little or nothing to address the compound effects of expansion on the local community, environment, biodiversity, light pollution, traffic and health impacts caused by the increased pollution levels upon the south west – pollution acknowledges no borders.

Section 106 terms

Terms favour BAL and are inadequate. Welcome S106 undertakings which assist in ridding local communities of airport-related parking problems. Mitigation measures and commitments to improve services and traffic flows must be put in place in a timely manner

and conditions enforced, allowing no slippage for 'commercial viability' or other reasons. The proposals are inadequate and insulting. The highway works are little more than 'tweaks' and will do little to improve the A38 around the airport entrances. A holistic solution will extend beyond any S106 contribution, burdening the taxpayer. Substantial improvements to the A38 will exacerbate congestion as improvements attract more traffic, as happened with the M25.

Second Comments (February 2019) - summarised

Noise from car alarms in multi-storey car park cause a shrill-like nuisance to near neighbours including disturbance at night. Further multi-storey car parks will only make this occurrence worse. Noise impacts from the Transport hub in the second multi-storey car park will also increase the likelihood of disturbance.

Increased carbon emissions from the proposal are in conflict with the Council's intentions to recognise a climate emergency and take steps to become carbon neutral.

BAL's claims about economic growth and benefits should be carefully scrutinised in the context of recognised independent publications such as '*Economics of Airport Expansion*' published by Delft in March 2013.

Third Comments (February 2019) – Summarised

The Government's Green Paper "Aviation 2050 - The future of UK aviation", which emphasises that aviation growth must be sustainable and environmentally acceptable, must be taken into account when determining this application.

Fourth comments (March 2019) Summarised.

The Joint Local Transport Plan 4, 2019-2036 (JLTP4), co-written by North Somerset Council, implies approval for airport growth, notwithstanding the current planning application. In this context, it is wrong for North Somerset Council to be the determining authority and the decision should be taken by The Secretary of State for Housing, Communities and Local Government.

In addition, recent statements from the Committee on Climate Change advocates steps to limit a growth in demand: something which this application directly conflicts with.

Fifth comments (August 2019) summarised

In response to the Roadmap submission by Bristol Airport Limited to reduce its carbon emissions to a 'net zero' by 2050. The Road Map plan considers only those emissions from the airport business's activities themselves and yet ignores totally the major huge pollutant which is aircraft emissions. As a consequence, this Council considers the Road Map plan to be irrelevant in the overarching scheme of the airport activities and to produce a minimal (not to say meaningless) effect on the environment.

Sixth Comments (November 2019) summarised

- Aviation growth and slowed considerably in recent years such that a future growth trajectory against past growth rates is misleading and flawed.
- The number of outbound to inbound passengers gives rise to 5:1 ratio of spend outside the UK economy. Rather than supporting the UK economy (including the regional economy of the South West), BAL makes a negative contribution to the UK's balance of payments.

- BAL's operating model narrows its airline customer base to low-cost airlines and tour operators. This encourages competition with other regional airports, mainly Cardiff and Exeter, which in aggregate have spare capacity of approximately 7 mppa.
- Employment at Bristol Airport is largely in low-skill and low-pay jobs that are increasingly being replaced by rapid advances in airport technologies. Any additional employment of this type generated by the proposed expansion is likely to be displaced in the short term.
- The Council's current appraisal, as demonstrated through published comments to date, of BAL economic impact assessment lacks sufficient critical appraisal and conclusion drawn from it are miss-guided. Further independent advice should be obtained and displayed on the planning portal before a decision is taken.
- The PC agree with the conclusion of the CPRE independent assessment that the economic benefits are overstated by at least 70%.
- Passenger growth at Bristol Airport beyond the current limit of 10 mppa would be incompatible with the CCC recommendation that to meet its carbon reduction targets, the Government has to limit aviation demand growth in the UK to "at most 25% above current levels" (level from 2018).
- The proposed expansion will result in a 50% increase in carbon emissions with no realistic prospect of mitigating the adverse environmental effects of this.
- Road congestion on approach routes will become much worse and this cannot be satisfactorily be mitigated, and its business model relies of car travel and use of its car parks.
- The current air and noise pollution from Bristol Airport already have a major adverse effect on the health and well-being of the communities affected by it, and this will only be exacerbated by the proposals.
- Illegal car parking, rat runs, speeding and other anti-social behaviour which occurs in communities near to the airport will be made worse.
- Any evaluated economic benefits of operating the airport to date should be reported inclusive of this cost to provide a full picture of the overall benefits or dis-benefits.
- The noise mapping calculations are lacking in the details that would allow an improved understanding of the basis upon which they have been carried out.
- Noise calculations do not take account of fuel load, disparities between landing and take-off, flight profiles and engine thrust. All of these elements affect the noise profile and impact on communities. Fleet renewal projections may not arise in which case noise impacts could be much higher.
- The value of Green Belt is being undermined and undervalued by allowing more airport parking in the Green Belt. The emphasis should be to substantially increase

the level of public transport and reduce car travel and parking demands. Pricing should also be reviewed to ensure optimum occupancy.

- The proposed Carbon Climate Change Action Plan (CCCAP) should be drawn up before any consent is granted, not afterwards.
- In view of government's lack of a coherent and definitive policy on aviation, and recent consultations which are designed to inform a more relevant policy in line with the declared Climate Change Emergency, there is a strong argument in support of a total moratorium on aviation expansion and airport growth until such time as a definitive policy is adopted by government.
- It is difficult for this Council to understand how local ecology can remain undamaged by the proposed expansions in aircraft and airport traffic in terms of emissions by increased aircraft flights contributing more carbon dioxide (CO₂), noise and intrusion into designated Green Belt land, as well as increased ground traffic from users of the airport by private, commercial and public transport.

Other Town / Parish Councils in North Somerset

Backwell Parish Council

January 2019

Backwell Parish Council support the principle of the proposed expansion.

We hope Bristol Airport's expansion will support further local employment opportunities for the residents of Backwell Parish. Employment opportunities could be helped by an additional bus service to the Airport from Backwell at the A370, as proposed.

Another benefit of the Airport for residents is the facilitation of travel, for both business and holidays including avoiding the need to travel to more distant airports such as Heathrow. In broad / world terms the adverse effects of Air Travel on the grave risks of Global Warming must however be taken into account. More locally Backwell Parish Council needs to consider the enormous direct impact it will have on the quality of life of our 250 Downside residents, especially those living next to the perimeter of the Airport.

During construction the majority of the building work will be on the north side of the Airport, so residents will be subjected to the construction disturbance and every attempt must be made to reduce noise and light pollution during that time.

The Airport must also address improvements to traffic movement on the A38 and Downside road and the amelioration of the additional problems that will be caused by the larger number of passengers.

Issues of concern include pollution (noise, light, fumes, CO₂), damage to our wildlife and the adverse effects of increased traffic and so congestion within the North Somerset area.

Specific requirements of Backwell residents include for following: avoiding excess traffic speed, need for pavements, avoiding parking of taxis and private cars in and around the perimeters, avoiding light and noise pollution, addressing the need for bus availability, requirements for acoustic barriers and reducing house-selling blight.

These issues must continue to be addressed not only during construction but throughout the operation of the expanded airport.

We are adamant that our in-principle support for 18/P/5118/OUT is not mistaken as support for any plans outside of this application.

November 2019

Backwell Parish Council notes that North Somerset Council has declared a climate emergency (which Backwell Parish Council fully supports) and that could fundamentally affect the validity of the expansion plans and needs to be fully taken into account when making this decision.

Issues of concern include pollution (noise, light, fumes, CO₂), damage to our wildlife and the adverse effects of increased traffic and so congestion within the North Somerset area.

In broad/ world / national terms the adverse effects of air travel on global warming must be taken into account. Whilst we applaud the efforts of Bristol Airport to be Carbon Neutral, this does not affect the emissions from the aircraft and the airfield.

It is known that quieter aircraft which tend to be newer are also more fuel efficient thereby ensuring both noise and GHG emission reductions. BAL intends to review landing charges by June 2020, this needs to be an integral part of any application.

Reiterates comments in January about minimising impacts on local residents.

As a pre-requisite it MUST be conditioned that any construction takes place only between 8am and 8pm, restricts light and noise to neighbours and avoid anti-social activities that affect nearby residents.

Our support has been given with the understanding that the above issues will be addressed, and they must continue to be priorities not only during construction but throughout the operation of the expanded airport. The climate risks and transport and other infrastructure deficiencies must be ameliorated and measured, with the resulting data made public, before any future further expansion is even proposed.

Barrow Gurney Parish Council:

Objects, primarily due to the absence of a meaningful transport strategy. The road network is already overloaded, with rural communities experiencing access difficulties and “rat-runs”. Localised road adjustments and ever-larger car parks do nothing for the wider network. A future “Mass Transit Scheme” is desirable but is not reality. A large Long Stay Car Park on the A370 close to M5 Junction 21 serviced by shuttle bus could remove many thousands of vehicle movements every day and provide a readily achievable “mass transit” solution.

Brockley Parish Council:

Objects, claiming the impact on the local area, both to people and wildlife, will be severe and coupled with JSP proposals to build thousands of houses will change this part of North Somerset from a rural community to an overcrowded transport hub. Reasons in detail:

1. Severe effect on the local road network. Public transport is inadequate, and it seems airport policy is to encourage car usage by increasing on-site parking. Increased car traffic

will increase air pollution (greenhouse gasses and other noxious gasses that affect human and biodiversity health), reduce transport efficiency (road saturation) and safety (narrow roads).

2. Silver Zone extension is within 2 km of the Special Area of Conservation (SAC) for greater and lesser horseshoe bats. Horseshoe bats are adversely affected by light and try to avoid it. MSCP2 with transport interchange must be completed before more Green Belt is used for parking.

3. Carbon emissions are predicted to rise by 59% from 2017 to 2026, however Bristol Airport aim to be carbon neutral by 2030. The plan to achieve this will not be published until 12 months after planning permission has been granted so this cannot be challenged. Climate change and its consequences are not given due urgency. The JSP target for North Somerset is to reduce carbon emission by 50% by 2035.

4. Business use has reduced from 19% to 16% since 2009 and most future growth will be in leisure travel; resultant tourist deficit will be detrimental to our economy.

5. There should be no increase in night flights. Unacceptable to increase them in the summer, when they cause maximum annoyance to residents. There is increasing medical awareness of the importance of undisturbed sleep, especially for children.

The proposal to expand from 10 to 12mppa should not be trivialised by the planned much larger proposed later expansion. The current application has significant adverse effects itself and is the precursor to the larger application.

Additional Information

It is our contention that a survey of the traffic using Brockley Lane and Chelvey Road needs to be undertaken to determine an accurate baseline number for the airport element of the present traffic and only then can the likely effect of an increase in passenger numbers to 12 million per annum be determined. It is likely that the increase in passenger numbers being proposed will exacerbate the present situation, where vehicles frequently need to reverse considerable distances when encountering tractors etc. and this situation cannot be dismissed as insignificant.

Burrington Parish Council:

The proposed growth of the airport is based on a 'predict and provide' model using unsubstantiated forecasts, and not by a clear justification in terms of economic benefits. However, the environmental harm far outweighs any benefits in terms of noise, traffic, carbon, visual and light pollution and other matters.

Butcombe Parish Council:

Requests refusal, failing which comprehensive mitigation of traffic and environmental impacts should be required. This should include major upgrading to those sections of the A38 carrying airport traffic, and air pollution monitoring of airport-generated vehicular and air traffic. Wishes to see the following covered:

- Double yellow lines, bollards and rails extended from the Airport roundabout along the A38 down to the New Road junction to Butcombe. To stop parking, including a

short stretch of New Road where cars sometimes wait or park, reducing visibility when arriving at the junction.

- Traffic calming signs and a reduced speed control zone from Redhill on the A38 to indicate junctions. Increased traffic along the A38 makes turning onto the A38 very dangerous due to the speed of traffic.
- Visibility splay (looking south) at the New Road junction to improve visibility for cars waiting to turn onto the A38 and for those travelling on the A38.
- CCTV to monitor the Airport entrance roundabout up to the Downend \ A38 junction and South down to the New Road junction. This should also cover Felton Common that is now being used as a Taxi holding area. Currently the entrance to the School and flying School is used as a Taxi holding area.
- Taxi holding area on the Airport site to avoid them parking all around the Airport.
- Free passenger drop-off area like all other Airports.
- Street cleaning Contractor to collect litter in all areas around the Airport. This should include New Road and Row of Ashes near the A38 junction, in view of the unacceptable level of detritus mostly left by airport traffic.
- Employ a Contractor to carry Article 4 directive monitoring of all unauthorised parking.
- Taxi Code of Conduct that all taxis visiting the Airport must abide by. This will help reduce the uncivil and aggressive conduct that the local community are currently experiencing from many taxi drivers.
- Airport to finance a new Community Fund with a wider remit. Butcombe's boundary abuts Felton Common, yet the Parish is currently excluded from the Community Fund.
- 2-mile restricted car parking zone around the Airport to prevent cars parking and waiting for arrivals.
- Commit to ongoing and transparent air quality monitoring in relation to both air and ground based traffic near the airport.

NSC should, with the Airport, Parish Councils and others, establish a thought through parking strategy, including the possibility of licensed parking sites outside the airport perimeter with proper transfer arrangements.

NSC should ensure any permitted development within the Green Belt is closely monitored and controlled, to ensure that any additional building is appropriately sited and screened.

Cleeve Parish Council:

Objects for the following reasons:

- Overall noise, but in particular the night noise.
- 4000-night flights, we do not want the flights to be able to be moved from the winter months to the summer months.
- Increase in traffic noise from passing vehicles
- Increased parking issues within the village.
- Silver Zone Extension Phase 2 is unacceptable.
- No more building through the use of permitted development within the Green belt.
- Increase of carbon emissions from vehicles and aircraft.
- Concerned about the wind turbines on top of the car parks because of the noise to residents and the view for those overlooking the site.

Congresbury Parish Council:

Objects for the following reasons:

- Current 10mppa cap should be reached and its impact understood before additional expansion is considered;
- PC does not believe the expansion will bring the outlined jobs and economic growth;
- More aircraft noise: PC already receives complaints including reports of significant health effects on residents and does not support lifting seasonal restrictions on night flights;
- Lack of infrastructure including roads and transport: severe effect on local road network; inadequate public transport, as shown by proposals for more on-site parking;
- Further traffic congestion in villages including Congresbury: proposed highway changes are inadequate;
- Expansion into Green Belt for parking: should be no more building through permitted development in the Green Belt; alternatives must be found to the low-cost parking strategy;
- Landscape (Mendip Hills) and biodiversity (SAC) impacts: King's Wood and Urchin Wood lie within Congresbury parish.
- Climate change: increasing capacity must be unsustainable when everyone must be committed to major reductions in carbon emissions.

Dundry Parish Council:

Strongly opposes the application on the following grounds:

Object to the release of the seasonal night time restrictions and this is likely to increase the potential for sleep disturbance. Moreover, increased flights will increase noise pollution and they request that mitigation measures extend to include noise mitigation for residents of Dundry.

Critical levels of traffic and congestion have already been reached on local approach roads and to add considerably to this would have unacceptable impacts.

Public Transport services to the airport are too expensive and significant improvements are required.

The impact on wildlife is unacceptable the added CO2 emissions will occur at a time when extensive reductions need to be made.

The application should be 'called-in' by the Government.

Kenn Parish Council:

No objections to the proposals on the airport site itself but concerns raised over:

- impact of increased traffic on the road infrastructure to/from the airport, as these local and largely country roads are not adequate for the purpose;
- night flights.

Kingston Seymour Parish Council:

Support in principle provided the following planning conditions are applied:

- No aircraft are to turn over the village of Kingston Seymour on take-off or landing. Any turning should only commence once the aircraft is over the Bristol channel. The reason for this is to reduce pollution and environmental noise impact within the village.
- No additional (from the current limit of 4,000 per annum) night time (11:00pm to 6:00am) aircraft movements are to be permitted. The reason for this is environmental noise impact to residence of Kingston Seymour.

Also, very concerned about additional traffic movements in the area. Do not consider the traffic impact assessment to be adequate, nor coordinated with the requirements of the wider North Somerset plans and related developments within the area. Concerned that the additional traffic using the M5 at Junction 21 and congestion at the Congresbury Traffic Lights will encourage additional traffic to utilise Junction 20 at Clevedon and the B3133 Clevedon-Yatton Road and surrounding country lanes, all of which are unsuitable and will become very congested at peak periods. Would like to see how this issue will be properly managed. Unable to fully support the Application until these points of concern are satisfactorily resolved either by NSC or the Airport.

Locking Parish Council:

Reiterate previous concerns about increase noise pollution and we fully support the comments made by PCAA.

Long Ashton Parish Council:

Supports comments of the PCAA, objects to this application and recommends its refusal with the following concerns:

- Traffic congestion is already a problem so the existing cap on numbers should remain until vast improvements have been made to all the main access roads. The PC notes that many people travelling to the airport do so by car, therefore transport in the surrounding village lanes are severely overloaded; any increase in vehicles will lead to gridlock and residents in these villages should not be expected to accept further increases in vehicles. Local communities are already experiencing many inconveniences, and this should not be increased.
- Green Belt boundaries should be maintained and there should be no further extension of car parks into the greenbelt.
- The approved multi-storey car parks should be constructed before any further extensions are agreed.
- Increased carbon emissions will be detrimental to the environment.
- Any rescheduling of night flights is unacceptable.
- Underdevelopment of other nearby regional airports and removal of the bridge tolls to Wales may further increase usage and thus traffic to/from Bristol airport.
- Expansion of airport is not addressed in the Joint Spatial Plan

Nailsea Town Council: Objects on the following grounds:

The proposal will adversely impact all routes between the M5 and the airport. There is no public transport between Nailsea, and BA and the expansion will lead to considerable increases in private travel from passengers and staff, and this should be mitigated.

The proposal will lead to increased levels of carbon emissions and air pollution.

Portishead Town Council:

1. **SUPPORT:** Portishead Town Council welcomes the short to medium term benefits that the planning application predicts will be brought to the local area.
2. **INCONCLUSIVE:** The impact on the M5 and Junction 19 is insufficiently researched and there is no reference to any mitigation for potential impact. This does not allow Portishead Town Council to draw meaningful conclusions on the impact that the airport expansion would have on Portishead residents' own day to day travel.
3. **INCONCLUSIVE:** Portishead Town Council would like to know what North Somerset District Council's declaration of a status of climate emergency means for routine decision making and seeks clarity on whether approval of this application and the state of emergency can co-exist.
4. **INCONCLUSIVE:** Portishead Town Council would like to highlight that the airport expansion assessments are focussed on the airport, not the air travel. Is North Somerset Council able to confirm that the target for the reduction in carbon emissions for the area - to reduce carbon emissions by 50% by 2035 and 83% by 2050 - can still be met following their approval of an increase in air travel?
5. **OBJECTION:** Portishead Town Council would like to highlight that there is a real risk that national policy in relation to air travel and climate change will change during the time this expansion is under development. This could result in the current plans for expansion (and all subsequent un-costed investment arising from the expansion) not achieving the benefits that were originally predicted to be realised in 2026. However, we will have gained improved airport facilities such as a covered forecourt, a new multi-storey car park, free drop off and set down area and improvements to the terminal building.

Weston-super-Mare Town Council:

Revokes its initial support, and now objects for the following reasons:

1. There is inadequate access for such a major development and the number of passengers that will result. In particular there are poor public transport links to the airport (including no rail link unlike almost all major airports) and the vast majority of travel to the airport is and will continue to be by car.
2. The current issues of illegal parking in the green belt and wider area of North Somerset will therefore be exacerbated by the development.
3. The massively increased number of flights that will be accommodated will result in unacceptable levels of noise pollution adversely affecting the health and wellbeing of local people in North Somerset, including in parts of Weston-Super-Mare, particularly the Worle area.
4. Environmental reasons. Much of Weston-super-Mare is at mean high tide level and at risk of flooding from sea level rise due to global warming. The council having declared a climate emergency, this application should not be approved as the proposals will lead to increased carbon emissions from the airport.

Winford Parish Council:

Objects. More passengers and flights will have a detrimental effect on the lives of the people of Winford Parish. A 40% increase in passengers from today will result in something like a 40% increase in disturbance.

Objections lodged so far from Winford Parish residents represent over 10% of households, covering the following issues (in order of frequency of mention):

- Nuisance parking in villages
- Noise/noise pollution
- Air quality/pollution
- Traffic congestion
- Inadequate road infrastructure
- Night flights/24-hour operation/proposed increase in summer
- Increase in traffic on local roads/rat running
- Rural amenity/quality of life/loss of rural character
- No capacity to expand/already too big
- Effects on physical/mental health
- Climate change/carbon emissions
- Loss of/negative effect on Green Belt
- Litter/urination/defecation
- Lack of consideration of impact on residents
- Taxis waiting on local roads/parking areas
- Frequency and/or low altitude of aircraft
- Impact on countryside/wildlife
- Corporate greed/profits going overseas at expense of local residents
- Light pollution
- Delays, difficulties and danger at junctions with A38
- Inadequate public transport provision
- No rail access or direct link with motorways
- Inadequate consultation/short deadline/lack of representation
- Odour/fume nuisance
- Unsightly admin block on A38
- Effect on house prices

Increased road traffic includes – besides passenger cars – suppliers' vehicles and construction traffic. No worthwhile improvements in road layout or capacity are being constructed and there is no progress on alternative forms of airport access transport. Regrettably the disturbance factors described in Winford PC's objection to the 2009 application all remain, increased today in volume with no significant improvements delivered. Parking and waiting on village roads, and on Felton Common, is also of concern. The 24-hour operation of the airport gives no respite from this. The proposed Authorised Waiting Area must be free of charge to address this problem effectively.

Noise impact on householders should be examined in detail in the context of the proposed increase in summer night flights and frequency of flights in general. More summer night flights must not be allowed. Neither should the Airport be allowed to 'borrow' from previous years' underused allowances. Environmental Statement conclusions are at odds with the definitions for LOAEL and SOAEL given by DEFRA.

Air quality limits have been reached or exceeded at Felton Primary School monitoring station. The exceedance has been ignored in NSC's 2018 Air Quality Annual Status Report. Road traffic in this location will increase and new aircraft stands are planned which will bring sources of pollution considerably closer to the school monitoring point. Odour has not been addressed due to a lack of complaints but at least eight of the objections put forward by residents refer to this as a problem.

Supports PCAA concerns at prospective damage to habitats and species populations. Deplores loss of Green Belt to parking and expects NSC to ensure MSCPs planned are completed first. Encouraging more air travel conflicts with achieving international targets for carbon emission reduction.

Queries whether admin building meets permitted development definition.

Yatton Parish Council:

Do not support application for the following reasons:

- An increase to 12 million passengers per annum with the associated noise, pollution and increased traffic accessing the airport without significant infrastructure links is not sustainable development.
- The proposed improvements to the A38 within this application do not adequately address these issues and the public transport proposals are aspirational that have no consequence or penalty should they not be achieved. This has already been demonstrated historically as the targets for public transport within the last master plan for 10 million passengers have still not been reached.
- To facilitate a passenger figure of 12 million, major road improvements would be required to create direct links from the M5(J20) and M5 (J21) with the capacity to accommodate the volume of traffic this number of passengers would generate and to prevent increased traffic volume through the surrounding villages e.g. Yatton and Congresbury. A rail connection from Temple Meads and Bristol Parkway to the airport would be a further major infrastructure improvement the Parish Council supported.
- The proposals within this application working towards the 12 million passengers should not commence until the infrastructure improvements are in place. Bristol Airport is becoming one of the largest regional airports but is notable for its lack of adequate direct links to any major motorway or rail link by comparison to other regional airports.
- The lifting of seasonal restrictions on night flights was not supported by the Parish Council.
- The Parish Council considered that the passenger number should remain capped at 10 million.

Other Local Authorities

Bath & North East Somerset Council: Objects

Transport Assessment

B&NES Council reiterates that a reliance on a realistic flight schedule is critical to form the basis of the overall traffic impact of the proposed scheme.

The daily profile of public transport connections was raised as a potential issue, and the applicant has undertaken a sensitivity test exercise in response. It is not certain whether the test scenarios do reflect actual usage trends through the day and week. It should be clarified whether daily profiles of public transport usage are available.

The submitted Technical Note also reviews the potential impact of the passenger number increases at the weekend and in particular Sunday (which is predicted to be the busiest day of the week). A review against the traffic flows on the A38 road corridor has also been undertaken. This shows that background traffic flows are lower on a typical Sunday, and it would be expected that the operation on a peak weekday would be the worst case scenario for the assessment of this corridor.

B&NES Council has collected further traffic information to evaluate the impact associated with Bristol Airport traffic travelling along the B3130 within the B&NES authority area. This information shows that the flows associated with Airport activities on the B3130 are not significantly different to those presented within the planning application submissions. It is unlikely that the estimated traffic flow changes would have a significant impact on the operation of the B3130 within the B&NES authority area. However, this is dependent on the estimates being accurate, and there not being an unconstrained growth in traffic generated by the Airport. There remains a significant concern that the proposed mitigation measures may not be able to resolve the existing problems experienced on the A38 road corridor, and this would result in traffic diverting through alternative routes. This includes the B3130 road corridor and surrounding routes. The need for an appropriate Airport Surface Access Strategy is considered in the following sections.

Local Transport Policy

B&NES Council has produced and consulted on a Chew Valley Transport Strategy. Further details should be provided on how this application will impact on the issues already faced within our communities.

Parking Strategy

With the proposed additional 4,850 car parking spaces there is potential for the Airport expansion project to have a greater impact on the wider highway network, and there was a concern that this was to the detriment of more ambitious public transport initiatives.

Any car park number changes should be linked to passenger numbers travelling through the Airport and achievement of challenging modal share targets (for both passengers and staff).

A Section 106 Agreement and planning conditions will need to consider how car parking at the Airport can be controlled over the life of the project. BANES should be given the opportunity to be involved in the development of the Airport Surface Access Strategy and the drafting of the Section 106 Agreement terms.

Environmental Impact Assessment

The traffic modelling has been updated following comments relating to the assignment of traffic across the local highway network. It is noted that this has changed the traffic volumes on each link through the baseline and development scenarios. The predicted flow levels along the A38 corridor and local roads have generally fallen as a result of this. It is assumed that these changes have been checked by the local highway authority as part of the ongoing consultation process.

An assessment of the Annual Average Daily Traffic (AADT) traffic flows has now been undertaken, and this approach demonstrates that the proposed scheme would have a more significant impact than presented in the original submission. This shows that there would be an increased impact on the majority of links as compared to the Annual Average Daily Weekday Traffic (AAWT) scenario and this includes the West Lane corridor. Whilst this is likely to have an impact on traffic flows within the B&NES authority area, it is acknowledged that the changes are minor and would not alter the EIA document conclusions.

Conclusion

In conclusion having reviewed the latest submissions provided by the applicant B&NES Council remains concerned that some potential impacts of the proposed scheme have not been addressed, and satisfactory amelioration is not agreed with the applicant at this time. For clarity, the following issues need to be addressed:

1. Strategic Impacts and amelioration agreed as part of the S106 agreement. Heads of terms should be agreed at this time.
2. The proposal needs to demonstrate how it will address and link to the draft Chew Valley Transport Strategy.

Bristol City Council:

BCC supports BA's role in connecting the region to global destinations and recognises its positive impact on supporting inclusive economic growth.

The Joint Spatial Plan identifies BA as a key strategic infrastructure employment location. Work to support the JSP has identified relatively poor surface access, with no direct motorway or rail connections. Essential that BA works with the region on identifying improvements in connectivity to support continued growth. Good connectivity between Bristol and BA essential to maximise economic benefits and ensure jobs are accessible to deprived communities, in South Bristol and beyond. A substantial proportion of the nearly 4,000 people currently employed on site are from Bristol, particularly south Bristol. Separately to this application, BCC would encourage new office or industrial and warehousing space near the airport development area, benefiting growing SMEs in South Bristol which currently have limited options for expansion. BA should work with local authorities' skill and employability services, job brokerage and apprenticeships schemes, to assist job seekers in disadvantaged areas of south Bristol and the wider city. BA and partner organisations should become accredited living wage employers.

Expansion should be managed in a responsible and sustainable way, notably in relation to climate change. BA growth can reduce traffic forced to travel to larger airports.

Note BA's aspirations for expansion up to 20 mppa. Keen to work with BA and NSC on measures to improve connectivity and maximise economic benefits as future growth plans come forward, e.g. mass transit.

Detailed transport comments

TA scenarios involve a gap (2021-2026) where effectively no assessment has been undertaken but where passenger growth will impact on the highway network. An interim assessment year is recommended to inform the point at which mitigations are required.

Proposed PT modal share should be much higher than 15%, a figure close to or already being achieved. Given the scale of development and the impact that relatively small changes to modal splits can make on the resultant trip generations, a sensitivity test assuming a lower PT and higher modal split should be provided. Parking demand uses a core modal share of 12.5% for PT, although 15% is the current target for 10mppa. Proposed new parking should be controlled to ensure that 15% PT modal share can be delivered.

No capacity assessment has been undertaken within BCC's area. The two junctions closest to Bristol are the Junction 7 A38 / A4174 South Bristol Link (SBL) and Junction 8. A370 / A4174 SBL. Capacity assessment of Junction 7 for 2026 indicates queuing in the AM and PM peak hours. Given queuing is already observed here, any change in trip generation as a result of the sensitivity testing may overload the junction. The predicted impact at the A370 / A4174 roundabout (Junction 8) and the signal junction with the A368 (Junction 13) is forecast to be less than 5% in the network peak, and no further assessment has been undertaken. BCC has concerns about the traffic surveys for the above junction representing existing conditions. Queuing and congestion already occur before 10mppa: relatively small increases in traffic will exacerbate this and may have a negative impact on journey times, road safety and the economy, including for BA passengers. BCC advise further assessment of these junctions in light of the mode share sensitivity testing, potentially as a planning condition if the application is approved. These junctions should be considered for improvements.

Bus priority measures will be required along large sections of the A38. BSWEL is looking at options for strategic transport interventions; early outputs should be incorporated into consideration of the application. Opportunities could become conditions on any approval. BA should consider impacts on existing public transport facilities within Bristol, e.g. the Centre stops. Park & Rides should be considered, e.g. expansion of Long Ashton P&R.

Walking and cycling improvements are proposed at A38 / Downside Road but no pedestrian crossing is proposed on West Lane and the footway along the A38 from Bristol is intermittent. Within Bristol, footway improvements and additional parking restrictions on the A38 Bridgwater Road could be brought forward through the proposed local highway improvements fund.

An updated Airport Surface Access Strategy is needed before approval of any new scheme (or similar visitor travel plan document). A workplace travel plan with a costed action plan and a clear budget for measures would be expected. What measures will be taken if the target is not met? Targets look modest compared to other businesses / airports. Plan lacks details on staff parking costs and demand management measures.

A 'Surface Access Steering Group' is proposed to govern sustainable transport measures. A significant proportion of the opportunities for sustainable travel will be through Bristol: clarification is sought on how mitigation funds will be available to Bristol, and BCC's role in implementing measures.

Mendip District Council:

"No observations".

Sedgemoor District Council:

Supports the planned, phased growth to provide enhanced connectivity and regional economic benefit but keen to ensure impacts properly assessed and mitigated, where necessary.

We have noted the additional detail provided to us and Highways England and are now able to formally write to withdraw our previous concerns (regarding the impact upon Junction 22 of the M5 and protected species) and offer support for the application. In respect of the highway impacts that support is provided on the basis that the condition recommended by HE relating to J22, in their letter of 4 April 2019, is attached pursuant to any consent.

Addendum

Concerns on J22 and protected species are resolved and withdrawn. SDC now support the application, subject to a condition recommended by Highways England relating to J22 being attached to any consent. SDC reiterate BA's importance for connectivity.

Somerset County Council:

SCC has been working closely with NSC and BA on BSWEL. Strongly supports phased airport growth, which will benefit the economy, subject to mitigation of local impacts. Understands any impacts at M5 J22 will be mitigated by condition or financial contribution to an improvement scheme. Draft S106 terms include funding to support delivery of suitable infrastructure and public transport. Wish to see S106 refer to public transport destinations in Somerset. Seeks cross-boundary approach to developing and funding infrastructure and public transport solutions.

South Gloucestershire Council:

Proposal would bring significant economic benefits to the site itself, as well as the wider WoE area and beyond, including to SG. It will be an attractive offer for foreign investors plus current indigenous businesses. It is understood that BA is a significant contributor to the visitor economy across the region, including in SG. SGC would welcome sustainable growth that will strengthen our tourist industry.

Application is a stepping stone towards BA's long-term ambitions. This context is crucial for understanding when, and how, new infrastructure is delivered to support surface access. Important that passenger growth is managed in a sustainable way and new infrastructure delivered in a timely manner. Use of airports in the South East and West Midlands implies latent demand for air travel in the South West that could be partially served by BA expansion, reducing travel to / from airports outside the region. Notwithstanding any differential in airfares between BA and other regional airports, this could have positive implications for traveller convenience, national airport capacity and sections of the strategic and local road networks. Combination of passenger origin data for SG with data for Gloucestershire makes meaningful analysis impossible at this stage but SGC continues to seek better data.

A key challenge is the suitability and coverage of surface-level transport connections to the Bristol Urban Area (including parts of SG) and public transport interchanges. Any expansion must be supported by a step change in improvements to surface-level travel,

focussing on convenient and affordable public transport solutions, to reduce the impact of the expansion on the local road network.

The Airport Flyer is a frequent bus service, but with geographical scope limited to Bristol City Centre. SG residents must interchange to reach BA by public transport. This leaves car travel as the most realistic and cost-effective option. The financial viability of expanding the Flyer to SG should be assessed. Alternatively, ensuring ticketing is seamless and competitively priced, with necessary interchanges made as smooth as possible.

Improvements to highway and public transport access will be necessary. SGC supports a mass transit link as a longer-term aspiration, which will require joint working to secure funding.

West of England Combined Authority:

Within the context of the emerging national aviation strategy, WECA supports in principle the expansion of Bristol Airport. This is in recognition that:

- Local, regional, national and international connectivity is a core component of a sustainable city region. Growth in the airport will reflect and help facilitate the strategic importance of the West of England and our own ambitions to grow our economy.
- Bristol Airport's role as a regional airport reduces the necessity for long distance journeys from and across the West of England region to access airports further afield.
- Bristol Airport is approximately eight miles from Bristol city centre. This is a relatively short distance, which offers opportunity for increased public transport mode share for both passengers and staff, particularly given its location on a public transport corridor.
- Growth in the airport is likely to act as a longer-term catalyst for wider investment in our public transport and highway network, which will in turn help sustain our city region through its wider benefits.

WECA supports the spatial development strategy set out in the JSP. This identifies Bristol Airport as a key strategic infrastructure employment location which will contribute to the region's delivery of 82,500 additional jobs by 2036 and ensure the continued economic growth of the West of England.

The location of Bristol Airport means that proposed expansion has clear implications for the A38 corridor. WECA expects the agreement of a proportionate and reasonable package of off-site investment in transport improvements as part of this application and welcomes the opportunity to work in partnership with Bristol Airport and the four West of England Unitary Authorities to ensure appropriate mitigation on the A38 corridor and connecting roads, to work towards a step-change in the use of sustainable travel modes to access Bristol Airport. The Bristol South West Economic Link (BSWEL) study looking at a range of public transport options to the Airport including heavy rail, tram train and mass transit is timely in this respect. As part of the currently draft Joint Local Transport Plan 2019 to 2036 WECA is proposing as part of a region wide network a mass transit route to the Airport. WECA will work closely with Bristol Airport on emerging proposals from this work and the BSWEL study.

Welsh Government Department of Economic Infrastructure

North Somerset Council (NSC) declared a climate emergency at the beginning of 2019. Its commitment, as set out in its Climate Emergency Strategy, is to be a carbon neutral council and a carbon neutral area by 2030. The seven key principles of the Climate Emergency Strategy include, inter alia, reducing emissions from transport.

The application fails to acknowledge the important role Cardiff International Airport plays in serving South Wales and the South West. Cardiff Airport is notably smaller than Bristol Airport but, crucially, it has capacity and aspiration to meet growth in the region.

Presently there is an imbalance in serving air passenger demand in the South West and South Wales region. Bristol airport is already the third largest airport in the UK outside of London. This causes unsustainable travel patterns and unnecessary transport impacts on the strategic road network (SRN) including the M4 and M5, as well as the local road network in South Wales and the South West, particularly rural North Somerset.

Cardiff International Airport's scale and market penetration is less strong, with unsustainable 'leakage' of custom to airports further afield, including Bristol Airport.

A rebalancing of airport related travel in the region would obviate the need for additional development at Bristol airport. Conversely, an increase in capacity at Bristol airport merely serves to reinforce the existing imbalance and increase unsustainable travel patterns of passengers from beyond the South West, such as South Wales. Rural North Somerset is ill equipped to accommodate an exacerbation of the existing level of unsustainable transport movements.

With no expansion of Bristol Airport currently factored into the DfT's aviation sector model, the proposed expansion should be reviewed by Central Government.

The value creation ascribed to Bristol Airport's expansion is not newly created value but will likely be displaced from existing airports, as all other airports within the South West and South Wales have capacity.

The application proposals seek to increase market share, through displacement, despite Bristol Airport's already demonstrably healthy market penetration. This runs counter to, in particular, Policy CS1 and the Council's Climate Change Emergency Strategy and Strategic Action Plan. The rationale for the development is not considered to be an appropriate approach to managing existing transport infrastructure in the South West region sustainably.

In respect of Site-Specific Policy DM50 "very special circumstances" which may otherwise justify the demonstrable harm the development will have on, inter alia, the Green Belt and wider environment have not been demonstrated.

We reiterate Cardiff Airport and others can readily serve increased passenger numbers in South Wales and the South West.

It is noteworthy that many representations to the airport proposals fundamentally question why the airport needs to expand its capacity.

The application does not demonstrate the very special circumstances which may otherwise provide justification for Green Belt development, contrary Policy DM50. Based on need

Policy CS1 makes it clear North Somerset Council is committed to reducing carbon emissions and tackling climate change, mitigating further impacts and supporting adaptation to its effects. The development will be to the detriment of environmental considerations, such as ecological, landscape, air quality, transport and noise impacts; all of which are negatively impacted and require mitigation which could otherwise be avoided.

The Welsh Government has already made significant investment in terminal improvements and route development at Cardiff International Airport. The application's cursory consideration of the potential of alternative airports to meet passenger demand is not credible.

Town / Parish Councils Outside North Somerset

Chew Magna Parish Council:

Requests NSC consider the following:

- a new airport fund for villages outside current funding scheme to help alleviate suffering from traffic congestion and litter from airport traffic;
- discussion with the PC over strategies that might ease current traffic congestion through Chew Magna;
- alternative non-Green Belt airport parking options, and construction of MSCPs at the airport;
- airport plans should conform to Government targets to limit CO2 emissions and reduce climate change, e.g. hard roof spaces could become 'green roofs';
- airport plans should mitigate noise pollution. More traffic noise through Chew Magna would increase sleep disturbance – BA acknowledges noise disturbance along the flight path and funds window soundproofing – mitigation of current noise pollution from traffic travelling through Chew Magna should be similarly funded;
- elements reserved for subsequent approval may include plans which would have further detrimental impact on the Green Belt and increase traffic, air, noise and light pollution.

Corston Parish Council:

Expansion plans are not considering the extra road traffic, emissions, and noise from aircraft with the proposed extended night time flying, within a predominate Green Belt area, with no infrastructure in place.

Low emissions and quieter aircraft engines would make life bearable for day to day living. If BA must expand, it should 'fit in' more with the families and their past generations who have lived and managed this land for years – rather than being bulldozed.

East Harptree Parish Council

Objects on the following grounds:

Unacceptable risk of pollution to East Harptree and the wider Chew Valley in terms of noise, air pollution, traffic congestion, inadequate sustainable transport provision, detrimental to Mendip Hills AONB, light pollution, and wildlife.

A separate petition objecting to the application from residents of East Harptree is also submitted. This is signed by 145 people under the heading:

"We the undersigned object to the expansion of Bristol Airport, because an increase in flights will lead to an increase in air pollution, noise pollution and traffic congestion. We would ask East Harptree Parish Council to also object on our behalf".

Keynsham Town Council:

Object on the following grounds:

- BA should be capped to 10 mppa as any increase above this will cause an increase in carbon emissions which is contrary to the national policy and NSC declared climate emergency: both of which propose to reduce carbon emissions.
- Adverse environmental impacts arising from Increased noise disturbance, particularly at night in summer months and increased air pollution.
- Increased car use, road congestion and parking issues.
- Flawed economic case.

Publow & Pensford Parish Council

Object. Noise pollution would be significant, but expansion should not be considered until flight paths have been redesigned. Added congestion on approach roads including the A37 is also a major concern.

Saltford Parish Council

Welcomes BANES ambition to address the climate emergency and its opposition to the application. We encourage BA to review and better manage their flights paths over Bath, Saltford and Keynsham who are concerned over increasing noise and air pollution arising from increasing flight numbers.

Stowey Sutton Parish Council:

Consider the application premature for the following reasons:

1. Potential impacts extend beyond North Somerset and should be open to wider vigorous examination.
2. Current consultations may influence the future of BA including the Government consultation on the future policy for the development of all UK airports.
3. JSP has yet to go through public examination and adoption.
4. Emerging NSC Local Plan is incomplete.

5. Joint Transport Study is still at consultation stage.

Objects to the application for the following reasons:

1. Contrary to NSC Policy 6 and 23 in respect of environmental concerns and alterations to Green Belt.
2. Contrary to NPPF in respect of greenhouse gas emissions: aircraft and increased private vehicle travel to and from the airport. (NPPF 11.1.2)

Increased traffic will have an impact on roads and country lanes in the Chew Valley area without funding to improve the road infrastructure. There appears to be no strategy by BA to reduce traffic or to mitigate against vehicle emissions or to improve road infrastructure on the feeder routes to the airport. This is contrary to the NPPF Para 4.29 and para 30 and is not in line with the targets set in the Green Paper 'Aviation 2050 - the future of UK aviation' Dec 2018.

3. With an increase in flights, including more condensed night flights in the summer, and lack of information on alternative flight paths, noise impact is likely to be more significant for our Parish. NSC should work with B&NES in assessing noise, this should include potential health impacts using the latest Government and World Health Organisation guidelines.

This is further evidence that the application is premature.

The information in respect of changes to flight paths should be available to all Parishes likely to be affected as part of the Planning application rather than subsequent to the application.

In addition, the Environmental Assessment (ES) has not assessed the noise impacts of flights under 7,000 feet which is likely to be the scenario for our Parish. Therefore, the conclusions of the ES appear to lack rigor in respect of the consequences of increase in flights and noise impacts on existing dwellings, those dwellings newly affected and tourism such as caravan parks in the Chew Valley, this is particularly so in respect of night noise. Whilst the impact on wildlife close to the airport is well documented within the PCAA response document, the EA has not considered potential impact on the Chew Valley Reservoir which is a Special Protection Area and SSSI.

4. With an increase in air traffic there will be an increase in emissions pollution, this is contrary to the Chief Medical Officers report 2017 'Health Impacts of Air Pollution' and NPPF (para 7 bullet point three and para 9 bullet points 2 & 4).

In addition, an alternative parking site proposed by land owners at M5 Junction 21, for 3,000 cars, should be examined in the context of NPPF Green Belt tests. The benefits are:

- reduced vehicle movements on the local road network due to the use of green buses reducing carbon emissions;
- an opportunity to allow the benefits of regulated parking to be shared with the community with low repercussions on residents, while preserving the Green Belt round the airport.

This site would accommodate the 2,700 cars predicted for Silver Zone Extension Phase 2. Meanwhile, BA should build the MSCP2 and public transport hub which is to be delivered for 10 mppa.

West Harptree Parish Council

Object. We support the detailed objection made by the PCAA and also consider the application should be called in by the Secretary of State.

Statutory Consultees

Environment Agency: No objection, subject to planning conditions being imposed.

Highways England:

No objections to the application provided planning conditions are imposed requiring improvement works at M5 Junction 22 / A38 are implemented before 11 mppa is exceeded at Bristol Airport

Historic England:

No objection based on additional information from the applicant (Technical Note March 2019) as this provides the clarity sought in respect of the potential effects of noise to designated heritage assets

Natural England:

The application site is close to the North Somerset & Mendip Bats Special Area of Conservation (SAC) which is a European site. The site is also notified as a series of Site(s) of Special Scientific Interest (SSSIs). Further information is required to demonstrate compliance with the Habitats Regulations. The consultation does not include a Habitats Regulations Assessment.

The Silver Zone extension and A38 improvements involve loss of bat habitat. In principle replacement habitat is acceptable. We also broadly support the suggested 'elements/aims' for the SAC/SPD Ecological Management Plan. The proposed replacement habitat is adjacent to Goblin Combe SSSI and there may be opportunities to secure positive and mutually beneficial long-term management for both sites; however Natural England is not sufficiently familiar with the land in question to confirm with enough certainty its suitability as replacement bat habitat or that potential adverse effects on Goblin Combe SSSI can be ruled out. We note the final package of SPD Replacement Habitat will be agreed with NSC and Natural England.

The Countryside and Rights of Way Act 2000 places a duty on public bodies to have regard to the purposes of AONBs in performing their functions. National policy also

requires great weight be given to conserving landscape and scenic beauty. The LVIA considers the effects of development at the airport itself on the special qualities of the Mendip Hills AONB, specifically outward views; dark skies and tranquillity. However, more aircraft flying over and within the setting of the AONB could have a significant effect and will require further consideration and, if necessary, additional mitigation.

The NPPF includes strong references to net environmental gain including in relation to transport infrastructure, an approach also encouraged by the 25 Year Environment Plan. In light of the NPPF and the JSP priority on development providing a net gain for biodiversity we encourage NSC to seek a net gain in biodiversity from this application.

We would expect NSC to assess and consider possible impacts of this proposal on the following material considerations:

- local sites (biodiversity and geodiversity)
- local landscape character
- local or national biodiversity priority habitats and species.

We have not assessed the potential for impacts on protected species. You should apply our Standing Advice as it is a material consideration in the same way as any individual response from Natural England following consultation.

Addendum September 2019

NE notes that NSC has undertaken an appropriate assessment of the proposal in accordance with Regulation 63 of the Conservation of Species and Habitats Regulations 2017 (as amended). NE notes that NSC's assessment concludes that the proposal will not result in adverse effects on the integrity of any of the sites in question. Having considered the assessment, and the measures proposed to mitigate for all identified adverse effects that could potentially occur as a result of the proposal, Natural England advises that we concur with the assessment conclusions, providing that all mitigation measures are appropriately secured in any permission given, as set out in *Part D Recommended Conditions*.

Wales & West Utilities:

Have no apparatus in the area.

Other Groups and Organisations

Parish Councils Airport Association:

Why the application should be refused:

1. Balance between economic benefits and environmental impacts not rigorously examined. Proposals contrary to: (i) NPPF objectives for sustainable development; (ii) Article 3 of the UN Framework on the Convention of Climate Change; (iii) Local Policy CS23.
2. Proposals contrary to all transport policies in which sustainable car travel is minimised. Substantial increase in car trips without any increase in modal share target (i) will not minimise use of the private car particularly without any change in parking strategy (ii) undermines WoE Local Authorities to reduce carbon emissions from vehicles.

3. Important alternatives not yet considered – specifically a site at Junction 21 – would remove need to take Green Belt land and would reduce car travel on small roads around the airport.
4. Major developments affecting Local Plan spatial strategy and impacting on other authorities (e.g. carbon emission and air quality targets) should be evaluated in accordance with NPPF ‘plan led system’.
5. No assessment of how growth in transport-related emissions is compatible with reduction targets NSC has agreed.
6. Economic paper emphasises positives and ignores or discounts negatives.
7. Items not mentioned that would have significant external impacts and costs include:
 - a. road traffic congestion and the costs of a 20% increase in passenger traffic
 - b. aircraft noise in general
 - c. sleep impacts of aircraft noise
 - d. climate change impacts
8. Risks wilfully not mentioned include:
 - a. significant changes to oil prices
 - b. carbon taxes
 - c. video conferencing and tele-presenting instead of face to face visits
 - d. climate change risks including hotter summers
 - e. Brexit and other risks to the economy in general and exchange rate in particular
9. Direct economic issues dismissed as ‘unlikely to be significant’, but with no methodology, workings, or evidence shown, include:
 - a. outbound tourism spending
 - b. congestion in the job market
 - c. Misleading data and assumptions that defy recent experience are apparent in claims concerning growth in jobs at the airport.

Why the application should be delayed through being premature:

10. Application is phase 1 of BA’s intended growth from 10 to 20 mppa. This development is so substantial, and its cumulative effect would be so significant, that to grant permission would undermine the plan-making process by predetermining decisions about the scale, location or phasing of infrastructure and other developments that are central to an emerging plan.
11. The emerging plan is at an advanced stage but is not yet formally part of the development plan. JLTP4 consultation commences 6 February 2019. PCAA has been unable to comment on the implications of JLTP4 within the consultation time frame of the application.

Conditions, if the application is granted:

12. PCAA concerned about the rigour with which NSC sets and maintains important conditions, e.g. releasing BA from a 2011 condition which required construction of a MSCP before any further use of Green Belt for low-cost parking. MSCP2 and the public transport hub have still to be delivered.

13. BA now wishes to be released from an important condition on the number of night flights in the summer months. A condition should not be over-turned just when it begins to bite.
14. Detailed comments made in respect of conditions. NSC needs to understand and act on the legitimate concerns of the local community, including the high priority issues identified below.

High priority issues for local communities:

The following are some of the local concerns but not in any priority order.

1. Noise – night flights; new flightpaths under CAP1616; ground noise; slow and uncertain introduction of a modern, quieter fleet; ungenerous compensation scheme; absence of any respite.
2. Car parking – continued expansion onto Green Belt; delays to MSCP; charged-for waiting area that will do little to stop parking on neighbouring roads; low-cost parking strategy that encourages more car access.
3. Near-monopoly on car parking – allowing more car parking at BA continues to support a near-monopoly and is anti-competitive.
4. No further growth should be granted until delivery of integrated transport such as mass transit or rail links and infrastructure such as the MSCP2 and public transport hub.
5. Public transport – unambitious targets for use of public transport; vagueness in respect of public transport interchange and community access to this, with low-cost parking for local people.
6. Road network – grossly insufficient road improvements to deal with an average of 9500 extra cars on the roads, every day, compared with today (maybe 13,000 at peak levels).
7. Policy CS23 requires satisfactory resolution of surface access infrastructure prior to further development.
8. Junction 21 car park should be considered within this application process.
9. Green Belt – serious visual impact from parking on open land; loss of biodiversity.
10. Biodiversity – loss of important foraging land; insufficient mitigation to address threats to the loss of biodiversity (incl. rare bats); poor control of lighting.
11. Air quality – impacts on S. Bristol; 300 premature deaths a year related to AQ.
12. Health impacts – absence of a Health Impact Assessment that deals comprehensively with potential adverse impacts on health.
13. Climate change – significant growth in aviation and vehicle emissions when policies all dictate need for dramatic reductions.
14. Permitted development – a feeling of loss of control because major developments have been allowed without proper scrutiny.
15. Use of public money to support a private developer whose business delivers significant environmental damage and will remove (at 12 mppa) £3.6bn from the UK economy mainly through the tourist deficit; a subsidy to wealthier people.
16. Assessment of alternatives – alternatives have not had comprehensive assessment; NSC is at risk of blindly accepting BA's story without enough challenge – Junction 21.
17. Economic considerations – further evidence needed particularly in light of Highways comment on the TA. Terms of reference need to be made available, if NSC engage external consultants – see direct employment figures.
18. Carbon and other greenhouse gas emissions – further evidence needed in light of comments by Campaign against Climate Change. Terms of reference need to be made available, if NSC engage external consultants.

19. Even-handedness of NSC – words and actions indicate a slavish commitment to economic considerations with serious disregard for the community and the environment.
20. Over 2000 objections have been lodged – this shows that there is:
 - i) A cry from residents for no more expansion due to impacts of airport operations;
 - ii) A call from the public for Authorities to take the lead on reducing carbon emissions from fossil fuel activities to safeguard the environment for future generations;
 - iii) A call by the staff including BALPA who echo concerns that low cost parking cannot be allowed to continue.

Supplementary comment

The application is phase 1 of growth to 12 mppa with expected growth to 20 mppa which will include land use changes. The emissions from land use changes from 10 mppa to 12 mppa should be recorded as a baseline for future land take and more importantly the record should be submitted to the national inventory to be offset.

Under EU legislation adopted in May 2018, EU Member States have to ensure that greenhouse gas emissions from land use, land use change or forestry are offset by at least an equivalent removal of CO₂ from the atmosphere in the period 2021 to 2030.

Addendum 1: Land Use Changes – Greenhouse Gas Emissions

Wood states 17.7.3 'Due to the small land take involved with the Proposed Development, land use changes as a result of the Proposed Development would have minimal effect on GHGs and are therefore not included.' Application is phase 1 of growth to 12 mppa with expected growth to 20 mppa which will include land use changes. Emissions from land use changes from 10 mppa to 12 mppa should be recorded as a baseline for future land take and the record submitted to the national inventory to be offset. Under EU legislation (May 2018), Member States must ensure that greenhouse gas emissions from land use, land use change or forestry are offset by at least an equivalent removal of CO₂ from the atmosphere in the period 2021 to 2030.

Addendum 2: Aviation Emissions

Committee on Climate Change have recommended reduced aviation emissions from flights. The advice includes requiring steps to limit growth in demand.

Addendum 3: Consultee Responses, Noise and Climate Change

Other authorities' responses do not mention living within environmental limits and moving to a low carbon economy.

JSP has yet to be examined. If JSP and JLTP4 are considered part of the determination of the application there is a case for prematurity. JSP contains no examination of growth beyond 10mppa so on what evidence does WECA claim that further growth would bring benefits to the region as suggested?

PCAA request that an independent economic analysis is carried out which includes social costs and all negative externalities. PCAA does not consider a comprehensive review has been undertaken at the congestion hotspots on the A370 within NS. Further analysis of the road network surrounding the airport should be undertaken including implications from removing the tariff on the Severn Bridge. PCAA supports a bat activity survey of the newly acquired woodland to offset impacts of Silver Zone Extension Phase 2.

While expansion could permit shorter surface journeys for those now travelling to South East and West Midlands airports, BA attracts many passengers from South Wales and seeks to attract more. The 'argument of leakage' suggests they should fly from Cardiff Airport. The Reading-Heathrow rail link (opening 2030) will benefit WoE and avoids car movements. BA has supplied no evidence of how passengers from the South West travel to Heathrow and other airports. Many passengers will use rail or coach.

Open spaces which are new and tranquil need to be made accessible for residents who can no longer use their gardens due to airport noise. This will often require a car journey which will increase road traffic and emissions.

BA should set up a 'Property Hardship Scheme' to help affected homeowners a) sell the house and b) receive compensation for the devaluation of their property. Heathrow airport runs a 'Property Hardship Scheme'.

NSC should consider the climate emergency in assessing the BA application.

Addendum 4: Surface Access

JLTP4 directly relates to the BA application for two main reasons:

1. Many district councils, such as South Gloucestershire, have commented on the infrastructure necessary for growth beyond 10mppa to 20mppa such as mass transit, not recognising that mass transit or metro bus are not part of this application and will not be delivered by 2026.
2. JLTP4 appears to fully support the proposed and future growth at the airport, although growth impacts have not been examined. Its statements appear to predetermine the application.

Addendum 5: Further comments by the PCAA to Bristol Airport application 18/P/5118/OUT on Climate Change 5 May 2019.

The PCAA do not accept that the carbon emissions from the expansion to 12 mppa are insignificant.

We request an answer to the question: can Bristol Airport, alongside other expanding airports, meet climate change targets being set to 2050? The issue here is that *the DfT cannot effectively manage CO2 emissions at a national level and at the same time delegate planning decisions for airport expansion to local planning authorities who take no account of growth at other airports.*

This should take into account recommendations that international aviation emissions should be formally included in carbon budgets at the next available opportunity, beginning with the sixth budget period (2033-37), on which the CCC will advise next year. Total UK aviation emissions should be limited to 31 Mt CO2 in 2050, in line with the Committee on Climate Change more stringent target of 31 Mt CO2 which is set out in the report 'Net Zero – the UK's contribution to stopping global warming'.

This will all be exceedingly difficult to achieve and the Committee is to again report on aviation emissions and the actions to be taken by the end of the year. The PCAA point out, again, that the application is premature to new aviation policy.

Addendum 6: Further comments 6 May 2019

Bristol Airport is predominantly a leisure airport and only 15% of the passengers are on business travel. (Reference 2015 CAA Passenger Survey Bristol Airport). The PCAA believe that business travel will fall in future due to the damaging impacts of flying as companies become increasingly aware of their corporate social responsibility.

The West of England economy is not dependent on further expansion of Bristol Airport.

Addendum 7: Response to Bristol Airport Forecast Validation by Mott MacDonald dated 23 May 2019.

There is no certainty that a new modern fleet of aircraft will be in operation at Bristol Airport by 2026.

The ES assessment found that around 450 dwellings lie within the 57 dB LAeq,16h contour in 2017 which are eligible for treatment under the current noise insulation scheme. Around 335 properties have been treated to date which therefore would represent approximately 75% of those eligible. The missing information is how much the owners of the dwellings had to contribute to the cost of insulation beyond the standard contribution from the airport. Under the 'Polluter Pays Principle' the airport should not expect owners to have to contribute to funding.

Allied to this, increased flight frequency will mean increased loss of tranquillity and potential flight path changes could further adversely impact of living conditions are public tranquillity.

In addition to noise mitigation for dwellings, sums should also be made available for other affected facilities such as Winford Primary School.

Addendum 8: Airspace Change Process

Since our original submission Bristol Airport has issued their Statement of Need for the modernisation of airspace under the CAP 1616 process. Consultation is projected to occur in 2020-21, design proposal lodged in 2022-23 and a final review is expected in 2024. We remain concerned, however, that this process is occurring at the same time as an application has been submitted for further growth at Bristol Airport. In particular, it will allow precision flying which will intensify noise over residents under the current flight paths creating 'noise ghettos' and will create new flight paths with new communities previously not affected by aircraft movements over flown.

Addendum 9: Response to Bristol Airport's roadmap to reduce carbon emissions.

Scope 1 and 2 emissions only deals with emissions in the airports direct control, but they are routine measures, but they do not mention what is planned to decommission their diesel bus fleet and off-setting their impacts should not be a go-to option.

For scope 3 emissions, BAL's has limited influence to reduce these and it relies heavily on off-setting and BAL can choose the offset provider. The PCAA are concerned that, if the price of offsetting is lower than the cost of decarbonising, the airport will continue to pollute rather than alter operational practices. Moreover, the granting of permission will enable massive growth in emissions aviation and surface access travel dwarfs the carbon footprint from ground operations.

Other objections have been made in respect of the following issues:

Addendum 10:

Bristol Airport is effectively operating a 24 hrs rolling flight schedule. This is at the expense of local communities in that it causes sleep disturbance and adversely affects health, and there should be a reduction in night flights particularly in the summer months.

Addendum 11: Further comments on climate change

The comments below cross refer to a letter dated 24 September 2019 from the Committee on Climate Change.

Aviation emissions in the UK are required to play an integral part in reducing emissions in the UK to net zero.

Current planned additional airport capacity in London, including the third runway at Heathrow, is likely to leave at most very limited room for growth at non-London airports.

Predicted expansion from all airports is simply impossible, based on a projected 25% increase in passenger numbers above 2018 levels, unless emission targets are broken.

The Department for Transport's aviation sector forecast model 2017 did not factor any growth beyond 10 mppa for Bristol Airport, and these forecasts are anyway too high as they do not yet reflect the net zero target for the UK. Thus, Bristol Airport should not be considered for further growth.

Addendum 12: Response to the Habitats Regulations Assessment (HRA) and other related documents

Despite Natural England and NSC not objecting to the application in terms biodiversity impacts following a Habitats Regulations Assessment process, the PCAA consider that purchasing replacement habitats, in this case an existing woodland, does not constitute the creation of new habitats thus authorities are allowing the airport to pay to pollute. The PCAA also believe that there will be a significant cumulative loss of foraging habitat for these bats as a result of other plans or projects.

Addendum 13: 'Moratorium on all airport expansion planning applications'

This is based on a letter from the Aviation Environment Federation to the Secretary of State for Transport dated 22 October 2019. This requests a suspension by all planning authorities of applications to increase the physical capacity of UK airports, or their approved operating caps, until there is a settled policy position against which such applications can be judged. This applies especially to GHG emissions, air quality and noise.

Addendum 14: 'Tankering'

The aviation emissions section within the Environmental Statement Ch 17 titled 'carbon and other GHG' and Appendix 17A has not identified all emissions connected to air transport movements. The statement within the document that *'the emissions reported are still deemed representative of a worst-case scenario'* is incorrect. This is because the inventory included fuel consumption as an integral part of the calculation. The calculation has missed out the fact that airlines sometimes increase their fuel intake to avoid buying higher-cost fuel at the destination airport. This saves fuel costs due to different prices of kerosene at different airports throughout Europe, a process known as 'Tankering'. No airline has declared this until very recently but increased fuel take to avoid extra costs increases the weight of the aircraft and thus there are additional emissions that wouldn't

otherwise have taken place. The data provided in support of the planning application is therefore erroneous as it omits to include the tankering impact.

Addendum 15 'Response to NSC Transport and Highway Comments'

Do not believe that the comments made by NSC on Transport and Highways on 12 November will alleviate congestion on the A38, A370 and local roads.

We highlight in particular the importance of the Modal Split and the timing of MSCP 2 and point out that a new consultation is required to ensure the new location of the Public Transport Interchange (as yet undefined) is suitable and that the interchange is delivered before the release of green belt land to car parking.

Demand that the Public Transport Interchange is brought forward before planning consent is granted to ensure delivery.

Welcome the PT modal share rising from 15% to 17.5% by 2026 but still think it is unambitious. We question how the increase of 2.5 % modal share was derived and why it wasn't 5% or higher in light of the Climate Emergency, particularly as NSC has declared a climate emergency.

There is no easy way to shift behaviour but the PCAA believe that the best way of doing this is to:

- Constrain the amount of car parking at the airport
- Accelerate the growth of higher-cost car parking (MSCP) that reduces land take at the airport and, through higher prices, encourages use of public transport
- Increase charges for Silver Zone parking which is currently the low-cost option
- Increase, if necessary, the carbon tax on 'kiss and drop' journeys
- Accept the need for strong enforcement of illegal and anti-social (off-site) car parking in the surrounding area

The PCAA have major concerns that there are too many assumptions within the assessments given. For example, there is the assumption that the additional bus services will commence as expected within a 24-month period from planning consent and that the modal split of 17.5% will be achieved. If these measures do not work, there will be a high degree of congestion on the road network surrounding the airport.

The idea that consent can be granted and that survey work on key junctions is then carried out with the option to improve junctions is flawed.

A survey of the traffic using Brockley Lane and Chelvey Road should be undertaken.

There is no light rail, metro service or mass transit, as at other airports, so even with a modal split of 17.5% car usage to and from the airport is high and the road infrastructure improvements are a mere tweaking of what is necessary to reduce congestion on local roads.

It is noted that NSC intends to set a penalty which is welcomed by the PCAA:

'A rollback of approved parking provision of 128 spaces per 0.1% fall in PT mode share percentage points. This final method should be used if there is repeated failure of the above incentives.' This equates to 3200 spaces if the modal figure does not increase from

15-17.5%. However, the airport may fail to reach the target of 15% that was set in 2011 and no penalties will accrue. The PCAA request that the penalty that is now proposed by NSC should have as its baseline the modal figure for 2019 which should be made available early in 2020.

The PCAA request that more than a further 6 EV charging points are provided.

It is disappointing that Bristol Airport has not outlined their plans and timetable for replacement of their own fleet, rental vehicles with electric or other low emission vehicles as part of their Carbon Management Plan.

The PCAA requests that additional lighting proposed associated to the highway works is made available to ensure it is compatible with Bat populations.

Addendum 16 'Determination of planning application'

The PCAA believe that application 18/P/5118/OUT cannot be determined until

- The Heathrow Court Case verdict has been delivered in January 2020.
- The Stop Stanstead Court Case verdict has been delivered in January 2020.
- The Marston Airport application has been determined; this has been to the Inspectorate and is now with the Secretary of State with a decision expected to be announced 18 January 2020.

All three cases are relevant to the Bristol application and refer to the Net Zero Emissions target.

The Department for Transport will be running a new, short consultation on 'Aviation 2050 - The Future of UK Aviation Strategy' in January, focusing on the issue of aviation emissions. The strategy should be published for June. (Reference: Environmental Law Foundation Regional Airport Conference held 28 November 2019)

This information is required in order that District Councillors can make an informed decision in light of the climate and biodiversity emergencies.

Addendum 17 - PCAA comments on the response submitted by BAL to NSC 'Transport and Highways Summary Comments' dated 12 November 2019

The PCAA reiterate comments made in Addendum 15 as it appears little progress has been made on two points; the construction on the MSCP 2 and the new location of the Public Transport Interchange (PTI).

Addendum 18: PCAA request that BAL update their traffic analysis to and from Bristol Airport due to the Clean Air Zone being introduced by Bristol City Council in 2021.

The PCAA is fully supportive of Bristol City Council's aim to improve air quality within Bristol for residents to be introduced in 2021. We believe that the Clean Air Zone may have unintended consequences on parishes within North Somerset by re-routing passengers travelling to and from Bristol Airport. For instance, passengers who travel via the 'Portway' in Bristol will, instead, go via junction 21 at Portishead through the villages of Wraxall and Barrow Gurney or seek alternative routes within North Somerset. One alternative route from Portishead is through Abbots Leigh, past Leigh Woods to its junction with the A370; then via the Link Road from the A370 to the A38. Parts of this route

are already exceptionally congested. A new assessment of airport traffic from the north of the airport is required before determining the planning application.

Addendum 19: Impacts of Bristol Airport planning application 18/P/5118/OUT on North Somerset Council Emergency Services based in Nailsea

The PCAA requests that NSC to examine access to the M5 and the surrounds due to the potential impact of passenger traffic avoiding the Portway route to the Airport due to the proposed Bristol Clean Air Zone. In the event of a serious accident on the M5, we question whether the Emergency Services could reach the scene of accidents without being caught in congestion or delayed by increased passenger traffic to and from the airport.

Addendum 20: PCAA comment on the Mayor of Bristol's response to planning application.

PCAA contend the Mayor altered his position regarding his submission to the Bristol Airport application by making the following select comment in an email (to an individual – not clarified who this is – but not directly to North Somerset Council).

The decision will be made by the Planning Committee at North Somerset Council as they are the relevant planning authority.

*Bristol City Council is a statutory consultee on this matter as an adjoining planning authority. I have **not written a letter of support** to the planning committee. I responded to the application (ref. 18/06657/K) with a covering letter on 1st April 2019 which accompanied a detailed response to North Somerset on a transport assessment of the implications of the expansion of Bristol Airport, namely the alterations to a roundabout and increased parking which the planning application deals with.*

Addendum 21: comments on the Visual Character Statement in particular reference to the Area of Natural Beauty, the Mendip Hills

Reiterates that the proposal will fail to conserve and fail to enhance the setting and thereby the natural beauty of the Mendip Hills AONB and would thus cause harm to valued landscape.

Comment on Independent Review of Climate Change by Jacobs 2 April 2019

The PCAA believe that the review by Jacobs on Climate Change is inadequate. The review has not answered any of the questions in our submission nor examined the data surrounding the issue of carbon emissions.

Comments on the Independent Review of Noise & Vibration by Jacobs and NSC Officer Richard Allard, and further comments by Bristol Airport. 2 April 2019

The number of dwellings experiencing an increase in noise however is 5050, based on the airport's comments. This is unacceptable.

Compensation for noise is poor with noise insulation grants not covering the total cost necessary for noise insulation. There is no compensation for loss of open space or enjoyment of gardens.

The responses given by Easyjet and Ryanair give no assurance that a modernised fleet will be operating at Bristol Airport in the near future or in 2026.

For stands 38 and 39, the PCAA maintain our objections to any change in condition on these stands. The noise level at 2026 will total 60.7 dBL_{aeq,8h} which, let's remember,

does not measure an air transport movement but is an average. This is above what is recommended by the WHO by a substantial amount.

The whole chapter was inadequate with no examination of health related issues in the vicinity of the airport related to noise impacts. There was no discussion of the frequency of increased flights during the day and loss of tranquillity and being able to sleep undisturbed at night.

Cumulative Impacts. The PCAA has questioned why modelling of ground, air and traffic noise is limited only to points exceptionally close to the airport with none to the South West. As we can see from the ground noise contour maps, noise pollution extends to Keynsham and Yatton.

Daily Flight Numbers Table 8 shows the average daily aircraft movements in a 92 day Summer Period. The PCAA note that these are averages and that on many days the flight numbers will be far higher such as at weekends and in the peak season. At those times there will be no respite during the day with a flight every three minutes during the day Helicopter noise should be included in the cumulative impacts of ground, air and traffic noise.

Bristol Airport should be made to submit a planning application to North Somerset Council on the installation of the wind turbines. It is not acceptable that the airport just inform NSC as the Council will be unable to place conditions on the airport to mitigate the impacts of these on local residents.

Response to comments by North Somerset Council on Biodiversity/ Report by John Associates 5th April 2019

The PCAA expect and request NSC to examine the 'Junction 21' document in terms of biodiversity loss in order that a comparison can be made between the two sites: Silver Zone Extension Zone Phase 2 and Junction 21 for car parking.

NSC has failed to consider whether the bats can reach Wrington Warren and will go to that site for foraging. Foraging by bats is long established across many generations and new lighting, whatever the scope, risks affecting the bats.

NSC has failed to consider whether the bats can reach Wrington Warren and will go to that site for foraging. Foraging by bats is long established across many generations and new lighting, whatever the scope, risks affecting the bats.

Public Health England:

Generally satisfied with ES approach to assessment but identify some concerns. Understand rationale for omitting a Decommissioning Environmental Management Plan (DEMP) but recommend that decommissioning, demolition and contamination are considered in design and construction. Satisfied with scope of Construction Environmental Management Plan (CEMP). Strategy needed to disseminate health assessment findings to stakeholders.

Welcome assessment of air quality impacts from construction dust and the cumulative effects of road traffic, aircraft emissions and ground support equipment during operation. Note current air quality around the airport is good and within legal limits. Recommend adequate dust control measures be required.

Major pollutants of concern from operation are nitrogen dioxide (NO₂) and particulate matter (PM₁₀/PM_{2.5}). Note that committed future developments near the airport have been reviewed to identify additional sources of emissions. NSC should refer to this when considering any future residential developments nearby.

Air quality assessment concludes there are no receptors where annual mean NO₂ concentration is predicted to exceed annual mean Air Quality Assessment Level (AQAL) of 40 µg/m³. Defra guidance suggests that where annual mean NO₂ concentration is below 60 µg/m³ it is unlikely there will be a breach of the one-hour AQAL. Reassured that all modelled annual mean NO₂ concentrations are below this value and there is unlikely to be an exceedance of the one-hour mean NO₂ AQAL.

Note possible additional intrusive investigation of site conditions once development commences and need for sign-off by relevant agencies. Satisfied that CEMP, and other operational documents, should provide adequate protection in relation to accidental release of fuel or other chemicals during construction and operation.

Aquifer beneath site is sensitive to pollution. An Environmental Response Plan (ERP) will be produced as part of the overarching CEMP to mitigate chemical spillages during construction. Reassured that existing operations incorporating best practice have led to no observable impact on the aquifer. During operation, Airport should comply with conditions to control discharges to groundwater set out in an Environmental Permit.

Welcome assessment of annoyance and sleep disturbance due to operational noise. As well as number of people affected, it may be informative to express noise impacts in terms of DALYs and in monetary terms. There is insufficient good quality evidence as to whether insulation schemes are effective at reducing annoyance and self-reported sleep disturbance. Recommend that additional health outcomes are considered, including cognitive impairment in children in local schools, and cardiovascular disease.

Welcome acknowledgement of the 2018 WHO Environment Noise Guidelines (ENG). Much of the UK population are currently exposed to noise levels exceeding these. Action requires a long-term strategy. Recommend the airport outline in more detail how the proposal aims to reduce adverse effects of noise on health and quality of life in the long term and that ENG evidence base is considered when quantifying the health effects of noise.

Decisions about mitigation should be underpinned by evidence: are measures proven to reduce adverse impacts on health and quality of life? Where evidence is weak / lacking, there should be a strategy for monitoring and evaluating effectiveness.

Welcome proposal to enhance and publicise noise insulation grant scheme. Any such scheme needs a holistic approach which achieves a healthy indoor environment, taking into consideration noise, ventilation, overheating risk, indoor air quality and need to open windows.

Proposals should consider the evidence that quiet areas can have both a direct beneficial health effect and help restore or compensate for adverse health effects of noise in the residential environment. Proposed noise insulation scheme will not protect amenity spaces (such as private gardens) from increased noise exposure, and there may be

opportunities to create new tranquil public spaces easily accessible to communities exposed to increased noise.

Welcome recommendations relating to the Outline CEMP and encourage their adoption. Acknowledge paucity of evidence on health effects of construction noise for large infrastructure projects. Airport should consider emerging evidence and regularly review its assessment of impacts.

Welcome use of local health indicators and priorities in the ES and note findings on noise. Very important that expected benefits attributed to the enhanced noise insulation scheme are achieved in practice and monitoring/post evaluation of health outcomes may be needed to verify this. ES does not consider in detail potential interaction effects between wider determinants of health (e.g. noise, air quality, community cohesion), which could lead to cumulative effects not assessed.

For aviation noise, modelling is based on indicative, not finalised flightpaths. Airport should agree a strategy to address this, and additional assessments may be needed during finalisation of flightpaths if consent is granted, to assess full scale and distribution of localised impacts.

Documents do not consider risks associated with electric and magnetic fields. There is a potential health impact around substations, and power lines and cables. Airport should confirm that adequate assessment has been undertaken.

Others

Backwell Residents Association

Recognise the convenience of a good regional airport but these are outweighed by the following concerns:

- Volume of traffic using local roads particularly narrow roads, which will be exacerbated by the application.
- Aircraft Noise is very intrusive will become more frequent
- Night-flying is disturbing to local residents and should not be allowed
- Carbon emissions and air pollution will be exacerbated
- Green Belt encroachment through more car parking allied to the recent unsightly office building is unacceptable.

British Airline Pilots Association (BALPA)

Objects based on a flawed employee parking strategy. Shift patterns make car sharing and public transport access unfeasible so parking demand from staff is under-estimated, yet no additional staff parking is proposed. Replacing Silver Zone staff parking with passenger block parking and relocating staff parking to the underused northside would allow more efficient use of land. Otherwise, very special circumstances do not exist. Continuing present staff parking arrangements in the Silver Zone also has safety implications for the airlines in terms of reduced accessibility for pilots and aircrew.

Business West:

Strongly support the application, as a first step towards delivering long-term growth plans. Will support overall business connectivity, help business sectors and help underpin

continued economic growth and greater international investment and trade in the region. Recognise also the critical importance of delivering surface infrastructure to support growth.

The city region is the largest exporter to Europe amongst all other non-London cities, whilst our key growth sectors all have strong international components: including aerospace, high tech, digital and creative, advanced manufacturing and low carbon. Airports also underpin our labour market. The West of England economy depends on highly skilled EU and global migrants, often using what used to be predominately outbound tourist routes to Spain, France, Italy and Eastern Europe. The region could improve from enhanced international connectivity beyond Europe – particularly for direct flights to key business destinations, notably the US, the Middle East and Asia. Deepening existing routes allows greater frequency and makes business travel more viable.

Campaign Against Climate Change:

Recommends refusal on grounds of unacceptable climate change impact. The Environmental Statement describes the carbon emissions from the project as 'not significant'. This is misleading. Operational carbon emissions by 2026 would be significantly greater than from all other transport, homes and industry in North Somerset in 2016. The Environmental Statement predicts a 73% increase in aviation emissions and a 66% increase in the overall operational emissions of the airport compared to 2017. The assumption that emissions from international flights will grow more slowly from 10-12mppa than from 8-10mppa should be tested.

Flying not only emits CO₂, but by emitting other gases and particles at altitude and forming contrails, there is an additional contribution to global warming that may be even more significant than the CO₂ emitted. Because these 'non-CO₂ effects' are variable and hard to calculate exactly, they are almost always ignored in planning and policy decisions, so the climate impact of aviation is significantly underestimated. Government guidelines for company reporting of CO₂ emissions suggest, as an approximation, multiplying aviation emissions by 1.9. This additional climate impact makes policies which allow aviation to grow while seeking to cut emissions elsewhere even more dangerous.

The Environmental Statement correctly states that there is uncertainty regarding UK GHG policy in the aviation sector. In this situation, it would be logical for local government to work based on facts, rather than government indecision. The latest science means we need to reduce emissions even more radically than legislated for in the Climate Change Act. Excluding aviation from this would make meaningful carbon reduction in line with the Paris agreement impossible and is unfair to other sectors of the economy. The Government claim that emissions will be dealt with by the industry's carbon offsetting scheme, CORSIA, does not hold up to scrutiny. Offsetting cannot be a long-term solution to aviation emissions, and we should be pursuing genuine reductions by managing aviation demand.

Avon Wildlife Trust

Objects in principle to the proposal, as we do not believe that airport expansion is consistent with the action needed to address a climate emergency due to the carbon emissions from flights and from local travel to the airport.

The airport is located in an important area for local wildlife, with species including dormice, silver washed fritillary and stinking hellebore in the surrounding woodlands at Cleeve Ridge and Kingswood and the Wildlife Trust reserve at Goblin Combe. It will be vitally important that every possible measure is taken to avoid impacts on local wildlife and habitats. Moreover, habitats for wildlife should be enhanced in line with the Government's principle of biodiversity net gain. This must include measures for the protection and enhancement of habitats and foraging areas for greater and lesser horseshoe bats consistent with North Somerset and Mendip Bats Special Area of Conservation (SAC) Guidance on Development: Supplementary Planning Document.

Campaign for the Protection of Rural England - Avonside:

Objects. Endorses PCAA analysis and arguments.

Application raises sub-regional issues that should first be considered through the JSP:

- environmental – Green Belt; AONB; noise levels; carbon fall-out; flight paths; visual impact of low-flying jets;
- transport and traffic – inadequate JLTP4 mitigation; attraction of passengers from a wider, more dispersed catchment area, with implications for motorway and trunk road safety and resilience;
- wider economic aspects – plans speculate about the UK (and global) economy and the propensity for air travel; damage would be permanent even if demand and pattern of air travel evolve to a different point.

Further comments received August 2019

Objection based on socio-economic impacts and the impact that the proposal will have on the ability to achieve 'net-zero' greenhouse gas emissions by 2050. Within this context CPRE say:

Future UK aviation emissions targets will rely of limiting planned aviation expansion, which does not include further growth at Bristol Airport. Further GHG emissions from the proposal will therefore further compromise the UK zero carbon targets.

The projected demand for increased passenger travel will be reduced by Government carbon taxation, such that there is unlikely to be a demand for 12 mppa in the foreseeable future. As a result, Bristol Airport expansion is 'out of sync' with national demand forecasts.

Regional economic benefits of the proposed expansion in terms of jobs and net spend are exaggerated and unjustified and most alleged benefits are displaced rather than new. The social benefits are consequently much less than the adverse carbon emissions impacts.

Churchill and Langford Residents Action Group:

Planning conditions set in 2011 for surface access and environmental mitigation associated with the current expansion have yet to be met.

Progressive decarbonisation is crucial and yet there is (for aircraft) no evident zero-carbon alternative to fossil fuel.

Poor surface transport connections and consequent road congestion. Remarkably little remedial work on the local network is contemplated in the medium term and substantial location-specific engineering costs would arise along the A38 (particularly around Barrow Tanks). Brockley Combe is environmentally sensitive.

The Airport hinterland is increasingly to the North and not further into the SW peninsula: see for example the Airport Monitoring Report 2018 – for year 2017. Hence improved access to Bristol (and points beyond) is vital. There is no proposal to increase access by public transport and if increased only by present means along congested roads it would become increasingly unreliable and operationally problematic. Inadequate public transport development underlies the Airport's indication that it cannot meet future car-parking requirements within the Green Belt inset. A rapid transit route (Weston-super-Mare to Bristol, with a spur to the airport) using linear induction motor propulsion plus magnetic levitation would provide an unobtrusive, highly energy-efficient solution to this problem. A Maglev system can climb substantial gradients and could follow existing waterways, supported on pylons.

Car parking provision at the airport is already inadequate and this serious problem must be resolved before expansion can be permitted. Silver Zone expansion requires many environmental issues concerning both lighting and overall design to be resolved first. Essential to acknowledge this.

Economic forecasts appear questionable, given uncertainties over outbound tourism. Inbound tourism and business activity are low. The various employment projections are also internally inconsistent.

Substantial consequential hazards and disbenefits posed for the environment. Mitigation offered is inadequate. Increased light levels will impact bats and their flight paths. There is also apparent confusion over which actual areas might be "improved" for bats etc.

Average surface noise contours along the flight paths would be substantially expanded, bringing considerable extra inconvenience and serious discomfort to local communities, especially at night.

The proposals are damaging and the associated benefits uncertain. Recommends refusal on the grounds of:

- a) insufficient preparation for the off-site implications of the anticipated extra passenger movements
- b) the profound environmentally deleterious impact and inadequate mitigation.

Federation of Bath Residents Association (FoBRA)

Endorses BANES objection and emphasise objections related to transport impacts, noise including night-time flights and added sleep disturbance. FoBRA recommends that a re-assessment of noise impacts is carried out, especially for those communities living under or near to flight paths.

Bristol, North Somerset and Bath & NE Somerset councils have each declared a Climate Emergency and are in the process of introducing measures to tackle environmental pollution, including a reduction of carbon aviation emissions, by 2030, and these should influence the validity of Bristol Airport's expansion plans.

BA's natural limit is 10 mppa and it should not be allowed to grow beyond this level.

Widcombe Residents' Association

Widcombe Association (WA) which represents approximately 700 residents and 70 businesses in an area of Bath city on the south side of the river, would be likely to be adversely affected by the noise and air pollution associated with the increase in flights, particularly but not exclusively night flights, if these proposals were approved.

Mendip Hills AONB Partnership:

Bristol Airport is within the setting of the Mendip Hills AONB. Continued growth of the airport raises strong concerns over its impact on the special qualities that create the AONB's sense of place and identity, together with the cumulative impact of development proposals on the nationally protected landscape.

The Countryside and Rights of Way Act 2000 imposes a duty to have regard to the purpose of conserving and enhancing natural beauty when discharging any function in relation to or affecting land within an AONB. The Planning Practice Guidance adds that the duty extends to development proposals outside AONBs which might impact on the setting of, and implementation of, their statutory purposes. The NPPF states that great weight should be given to conserving and enhancing landscape and scenic beauty in AONBs. DEFRA's 25 Year Environment Plan also seeks to conserve and enhance AONBs.

The Mendip Hills AONB Management Plan 2014-19 (adopted by North Somerset Council and others) identifies the special qualities of the Mendip Hills AONB, including views out, retaining dark skies and a sense of tranquillity and a landscape enjoyed by people for a range of quieter activities. The draft Mendip Hills AONB Plan 2019-2024, currently being finalised, refers to development pressures, including proposals to double the capacity of Bristol Airport.

Natural England's National Character Area profiles for the Bristol, Avon Valley and Ridges (the area in which the airport is located) and the Mendip Hills mention the valued tranquillity and views and note the potential for airport expansion to have significant effects in terms of noise, light pollution and traffic.

The airport is visible and identifiable from several viewpoints across the AONB. A proportion of aircraft pass over the Mendip Hills, impacting on the tranquillity of the area. Further increases to air traffic will worsen this impact. Lighting and sky glow are visible within the AONB and is a continued concern. The cumulative impact of lighting from the development proposal together with proposed development set out in the JSP needs to be considered.

Routes across the AONB are frequently used as short cuts by through traffic, affecting both tranquillity and the landscape. Modelling does not consider the cumulative impact from the development proposal and JSP proposals for significant residential development and associated infrastructure and this needs to be considered.

Stop Bristol Airport Expansion: Object on the following grounds:

BAL's assessment fails to take account of the WHO Environmental Noise Guidelines 2018, insofar as impact on residential properties and schools are concerned

The current noise assessment does not adequately address the case of open windows as a form of night time ventilation. With nearly 24000 additional aircraft movements being proposed for the night time flights compared to 2017, this is of grave concern for people's wellbeing and health in the surrounding area as they will be adversely affected by sleep disturbance. Appropriate guidance on this is provided by the World Health Organisation. In order to scope out the scale of this problem it is suggested that a cross section of those houses affected should be assessed to see how many houses do rely on open windows to provide ventilation throughout the year, especially in the summer months.

The adverse impact of noise of schools is also understated by BAL.

Further comment (December 2019)

Every local authority except one in the south west including North Somerset Council has declared a climate emergency. Planning application 18/P/5118/OUT plus the additional information is not compatible with 'Net Zero', the CCC recommendations on the UK's climate change obligations, the Core Strategy or the Climate Emergency declaration. Stop Bristol Airport Expansion therefore again objects to this planning application in the light of the additional information and requests that it is refused.

Sustainable Clevedon:

Objects. Application is for first phase of growth to triple passenger numbers by the 2040s. Increased air traffic is contrary to international, national and local commitments on climate change. Application fails to recognise the urgent need for action or the contribution air traffic growth is making to greenhouse emissions. Government action to mitigate climate change could lead to stranded assets and obsolete facilities in a way comparable to what is being experienced in shopping centres.

Comments from the general public, which includes comments from residents within and outside North Somerset

Impact assessment
Independent environmental / health assessment required, covering all aircraft routes and airport operations
Evaluation of health risks should consider in-combination effects – air/noise pollution, climate change
Airport expansion will cause many deaths through climate change
Measured against Raworth's 'Doughnut Economics' and the Thriving Places Index, proposal currently exceeds the environmental ceiling. Social impact on local population should also be tested more rigorously with a tool like the Happiness Pulse.
Relatively well-off fly – resources would be better spent on those in need
Recognise social benefits of BA – charity work, community funds, firefighting assistance
Aviation brings people together and enhances tourism and education opportunities
Flyers who object to more growth are being selfish
Objectors mainly old – younger people positive about jobs
Costs borne by communities outweigh benefits to aviation sector – costs are being

externalised
BA don't take safety seriously – parts fall off aircraft – one piece found in a field – this is hazardous, but BA won't engage
Climate change / energy use
Climate change – aircraft emissions – aviation produces more carbon emissions per person-kilometre than any other mode, and those emissions have more impact at altitude
Heathrow 3 rd runway approved – even more reason not to allow any more growth elsewhere
Climate change – vehicle emissions
Ambitious local targets require reduced GHG emissions in WoE – BA expansion undermines this
Bristol as a 'green city' has declared a climate emergency – it can't have an airport that ignores this just because it's over the boundary
Airports contribute a small part of emissions – should not be unfairly targeted – domestic and land are more significant sources
BA expansion makes a mockery of local requirements for low-carbon construction that others must abide by
Growth in flights only possible if no increase in carbon emissions
Reduce flights to conserve non-renewable resources
Climate change – operations – claims of carbon-neutrality are disingenuous – air / road traffic not considered
Wind turbines on the MSCP will not offset the emissions
Local air quality
Air quality in Bristol already breaches legal limits – more traffic will exacerbate this
Congestion will harm air quality as vehicles idle in queues or while parked
Growth may reduce journeys to other airports, but the pollution is dumped on the local area instead / conversely, selfish to want to export these problems to other areas
Air quality only monitored on-site, but plumes extend further
Air pollution affecting local villages and longer distances under flight paths – smaller airports more a problem than was thought
Air pollution will increase because of holding patterns due to lack of airspace / runway capacity / aircraft parking
Air pollution effects on health – hydrocarbons, PM, CO, NOx – will aggravate asthma, COPD – traffic passes schools, e.g. Winford, Parson St
Aviation fuel – potential health impact. Soot accumulates on fascia's, requiring annual cleaning / washing needs to be redone / oily film on windows & garden ponds / smell on garden produce – is it safe to eat?
Aircraft have been seen dumping fuel over houses
Increased aircraft efficiency overwhelmed by increased number of flights
Noise
Increased noise – already can't hold conversations in garden or hear radio/TV when planes go over, usually in closely spaced groups
Noise impact under-estimated – depends on location of monitoring equipment, which is controversial
Once an airport has permission to operate at a certain noise level it can never be reduced
Night flights should be separated from overall expansion – very different issues requiring different consideration
Night flights – disproportionate number for a regional airport – 4,000 against Heathrow's

5,800 – why is Heathrow more tightly regulated?
Night noise – impacts on residents and wildlife
Night flights should be banned, or not increased – sound carries further at night
Opposition to removal of seasonal limits for night flights – but don't add more flights during daytime
Night flights should not be increased in summer, when residents want to sleep with windows open – homes don't have air con so are denied right to fresh air – double glazing grants not much use in this context – with climate change warmer summers will mean more need to open windows
More night flights mean more choice and helps the economy
Long-term health impacts of exposure to noise and pollution – blood pressure, stress, heart disease, cancers – sleep disruption worsens this – people make mistakes, can lead to traffic accidents
Loss of tranquil countryside / residents choose rural area and expect it to stay that way / aircraft noise is greater where less ambient noise to mask it
Residents shouldn't suffer reduced quality of life for sake of private profit
Flight paths go over schools / homes, risking children's health and development
Flight paths creeping north over Dundry Hill
AONB – overflying
Noise worse under flight paths than near airport as duration is longer
Westerly departures are less disruptive, yet BA sends many flights to the east, low over housing areas
Area overflown will increase as flights increase
Aircraft flying lower than they should be / used to be
Light aircraft orbit over Butcombe to avoid incoming flights
BA have no control over when quieter planes will be delivered
Use electric noiseless planes
Compensation offered is inadequate
Catchment boundary for help with double glazing costs too narrow – process should be quicker
Noise frightens horses – road safety danger
Light
Increased light pollution
Light attracts insects – denuding foraging habitat elsewhere
Biodiversity
Disturbance to nightly ecosystem
Silver Zone full of badger dens – illegal to tamper with
Silver Zone extension too close to SAC – bats are light-averse
Biodiversity mitigation inadequate – it cannot replace foraging areas lost
Biodiversity mitigation includes double-counting with 10mppa provision – not a net addition
Other developers would be refused because of bat impacts – BA should not be privileged
Lapwings a common sight here 30 years ago – now disappeared
Green Belt / visual impact
Loss of Green Belt – urban sprawl, loss of natural beauty, hedgerow removal
No very special circumstances demonstrated
Inconsistent to protect Green Belt on the edge of Bristol but not here
Should be resisted like any other inappropriate industrial expansion into a rural location

BA not trying hard enough on MSCP – Green Belt land too easy an option – should develop within existing footprint
BA applying different standards to Green Belt and visual impact if PD (admin block) than for MSCP or surface parking
Admin block is an eyesore – indicative of BA insensitivity
BA and other landowners using land for parking should be treated even-handedly
BA already blights landscape, especially when viewed from AONB – scale and height of proposals inconsistent with this designation
Too close to AONB
Road expansion would damage landscape / wildlife
Approach from the north-east is unattractive and cluttered – approval should include improved public realm
Hilltop location – very obtrusive, gives negative impression – need more landscaping / less light pollution – see Govt's 25-year Environment Plan – planting will help with carbon offsetting
Natural capacity of the site being exceeded
5-storey MSCP out of character and too high
Insufficient info on the size and height of the rooftop wind turbines
More planes will be an eyesore
Need / scale / phasing
Conflicts with previous plans
Lack of integration with JSP / JLTP – premature to consider before these are finalised – needs a strategic plan
Premature ahead of finalised Master Plan – Part 1 of an expansion to 20mppa – need to see the full picture
Decision should be deferred until national aviation strategy finalised
Project should be driven by local / regional needs, not the good of the owners
Spend the money on improving cycling/walking in and around Bristol / on PT, especially the rail system, and on sustainable energy research and development
No evidence to substantiate claims of likely growth
No need to expand – airport already works well, employs everyone who wants to work there and at 10mppa meets the needs of the region
If demand wasn't there, BA wouldn't be seeking permission to expand
Population growth in the SW is driving air traffic growth
If air travel becomes less popular because of climate concerns, expansion would be unnecessary and a waste of resources, but the damage will have been done
Small airports more pleasant – less far to walk from the car – BA is losing this advantage
With daily flights to Schiphol, BA already has all the connectivity it needs
Approval will only encourage BA to come back with even less acceptable levels of growth in future
10mppa to 12mppa is 20% but real increase on now is 8mppa to 12mppa – 50%
Additional capacity not needed when 2mppa still to go from existing permission
Airport expansion will encourage other Green Belt developments nearby
Work has already started on the car park – NSC should take enforcement action
MSCP already approved but not started – no more approvals until it's built
12mppa unlikely to be reached by 2026 – is real reason for application to increase revenue from shops and parking?
Alternatives / funding

Unsuitable hilltop location – poor weather record, poor accessibility, constrained runway length
Radical improvements to accessibility would be environmentally destructive
Any increase in capacity should be planned nationally / regionally / locally to optimise location
Develop new airport at Bristol, Filton, on the coast, or elsewhere
Cardiff / Exeter (/Bournemouth/Newquay?) have spare capacity and better infrastructure / accessibility – spread the impact fairly
BA should not aim to serve the whole of the SW and South Wales – competitive drive not good for local environment or economy (externalities)
Cardiff offer long-haul flights – longer runway
Exeter Airport is too expensive and has too few destinations
BA growth threatens viability of other regional airports, drawing in road traffic unnecessarily
BA expansion complements plans to expand other airports
Heathrow getting third runway and improved rail access – BA expansion unnecessary as Heathrow offers far better connectivity
Improve public transport to major hubs instead of developing regional airports
Airport expansion best reserved for already highly developed parts of the country, not rolling countryside
NSC won't allow the airport to move out of North Somerset because they would lose revenue
Expansion good as will reduce need to travel elsewhere for flights (leakage) – saving time, money and car pollution, plus more local economic benefit – but BA's accessibility needs to be better. Conversely, reduced leakage means more cars going through Bristol instead of continuing to London.
Bristol not necessarily airport of choice even for locals – London / Birmingham more accessible, cheaper/better parking / accommodation, wider choice of destinations and when regional flight supplements are added they win economically
Emphasise more westerly airports clawing back passengers from Bristol, not just Bristol clawing back from London
Airport should pay for all environmental / infrastructure costs
Will development along A38 be needed to pay for transport improvements?
No need for short-haul flights to Europe – the worst in carbon terms – can travel by train, including night trains
83% of flights from BA are recreational and therefore unnecessary – no need to destroy more environment
Travel less – holiday in the UK
Brexit will reduce the number of flights so expansion unnecessary
Parking
Insufficient parking for those who have no alternative
Vehicles parked in villages (and even in Bath) or in passing places, sometimes illegally, to avoid high parking charge squeeze out residents and their visitors – consider 3-mile residents-only parking and/or free pick-up/drop-off parking
School coach no longer comes through Felton because of parked cars obstructing the route
Illegal road use will consume police resources
Cheaper parking on-site would relieve problem of parking in villages and on unauthorised sites
Littering by short-term parkers – damages amenity and is a risk to local wildlife – taxis

must be found space to wait on-site and BA should employ workers to pick up the mess in the surrounding area
Airport taxis take up spaces on Felton Common, preventing local people from parking there
Revenue from low-cost parking dictates surface access strategy – no incentive to develop alternatives to surface parking
Additional parking encourages unsustainable travel – should be rejected to concentrate BA's mind on better public transport
Plans should include a drop-off area free for around 15 mins – BA should be like other airports on this – should be imposed by condition
Barriers to prevent drop-off is just a revenue raiser
More on-site parking could lead to lower charges
Frequent users should receive a discount
Parking on A38 below flight path a security issue – also road safety issue – red lines / CCTV needed as double yellow lines ignored
Consider covers for ground level parking incorporating solar panels
BA have failed to deliver the MSCP required by the previous permission
Taxi monopoly means high fares, encouraging more travel by car
Nothing on plans to indicate electric vehicle charging points – can get to BA from Bristol on one charge but not back again
Locate parking further away – near motorway – with check-in facilities and buses to the airport
Road traffic
Too far from motorway / dual carriageway / rail network – no metro or tram – buses not convenient, quick or reliable enough
No road capacity for emergencies – if M5 blocked A38 becomes gridlocked – South Bristol Link has worsened A38 traffic flow
Increased road traffic, leading to congestion / gridlock – airport becomes unreachable
Poor surface accessibility – unreliable journeys, not just for airport users – congestion obstructs access to nearby homes – longer journeys to work and shop
Major housing growth proposed in NSC and B&NES – large cumulative traffic impact, e.g. on B3130
Road traffic figures don't factor in JSP housing developments
Improvements offered are inadequate
Be honest about long-term plans for strategic road-building to cope with all the extra traffic from developments
Increased connectivity by air deserves public funding for road improvements – conversely, others emphasise not subsidising a private business that imposes large externalities
Road traffic figures surveyed during school holidays – light traffic so not representative of other times
AONB – road traffic would damage
A38 is not of consistent quality – multiple speed limit changes
A38 cannot be dualled – too many bottlenecks between properties on both sides
A38 is congested – some say not around the airport, but others say airport roundabout a major congestion point
Airport signage is confusing
Signage guiding traffic to major routes is pointless when satnavs take shortest route however inadequate
Country roads / village streets inadequate – no footpaths, e.g. Downside, Wrington – conflict with cyclists, horse-riders, vehicles travel at speed

Night flights mean night road traffic through village streets – reversing beepers on while parking, taxis dropping off loud passengers at their cars
Consider restricting Brockley Combe access to BA – recent accident record
No detail given of A38 improvements – how can we be sure of effectiveness? Should be Phase 1, not Phase 2, to guarantee delivery
Road layouts at existing roundabouts are confusing and hazardous
Improved road layout needed – re-think junction with Downside Road – combine as one with airport junction?
Changes at Lulsgate Bottom are tinkering – not a lasting solution
Existing traffic lights have worsened traffic flow problems – why add more?
Improved A38 inadequate without consideration of the side roads – can't turn onto A38 because of oncoming traffic
Improve Barrow Lane junction as well as West Lane, also A370 junction at Congresbury
Traffic control plan needed for Winford
Impact on Chew Valley, especially Chew Magna – whatever is done to A38 won't be enough to resolve this
Needs faster road access from south (J22 via A38)
Road improvements will themselves cause disruption
BA offers staff free car parking – not consistent with managing down road traffic
Traffic could be reduced, and safety improved by piping aviation fuel instead of tankering it
Planes flying over the A38 are a distraction and safety hazard
Expansion good but transport needs to be sorted first
Although access inadequate, better than being stuck on motorways getting to London airports
Road improvements won't happen until the demand is there – so problems will be sorted over time – likewise PT improvements
Road improvements would also benefit PT access, which in turn would ease traffic flows
Public transport
BA should firstly address poor performance in developing PT, not be allowed to expand while ignoring this
BA not really trying – Heathrow aiming for 50% PT, BA just 15% – should focus on PT, not MSCPs
Onward connections difficult, especially with late arrivals
Bus very expensive and rarely full – cheaper for family to take a taxi
Rail link needed from Bristol, Nailsea & Backwell or Yatton
Poor access from North Bristol – using Birmingham sometimes better
Needs a national bus station with subsidised fares to local villages and provision for long-distance coaches
Bus service changes to benefit the airport have cut Wrington's direct links to Bristol and Weston
Disabled access
Disabled access seems worse not better in the new plans
Pavement widths make access difficult for wheelchair users and parents with children
Long walk to planes – travellers and land-bridges needed, especially for less able who may not know need to book assistance / too many stairs / consider lift to terminal from car park in place of slopes
Drop-off and pick-up parking inadequate for the disadvantaged
Airport should be future-proofed for an ageing population

Operations / passenger experience
Airport community consultation is ineffective
Stand restrictions should be removed to alleviate operations – fewer towing movements mean less noise
Relocation of staff parking away from terminal has inconvenienced staff – extra travelling adds to crew fatigue, plus it means crews no longer live within 1-hour standby time – bicycle / motorcycle parking needed near crew rooms
Runway should be improved – hump in the middle degrades the take-off weight of all aircraft
Emphasis on low-cost airlines means older, noisier, more polluting aircraft through unsocial hours
Insufficient ground staff and ground transfer buses
Facilities already inadequate – not enough seating in departure areas, long queues for security and for food, baggage delayed, bottlenecks pose health & safety risks
Passport queueing on stairs is dangerous – people in a hurry push – queues are unusually slow-moving – need faster passport readers
Retail facilities are excessive – seating areas have been progressively reduced to devote more space to shops – seating now inadequate
Walkway from drop-off to terminal not wide enough for people with cases to pass
Welcome canopy to keep rain off
Include adequate covered space for smokers to reduce stress
Tunnels needed – not good to board planes in the wind and rain
Proposed facilities will much improve the customer experience
Economy – negative comments
Financial benefits claimed wildly optimistic – not an independent assessment – needs scrutiny and guarantees with penalties
Prosperity not dependent on an airport – BA used to be tiny, yet the area thrived – Somerset has areas of deprivation notwithstanding airport growth
Congestion will impact on local businesses
Sleep disturbance from night flights will reduce people's effectiveness at work – BA should mitigate the economic impact of its activity
Negative equity effect on local house prices
Airport sprawl / aircraft noise will damage agricultural / tourist economy
Agricultural land may be needed in future to grow food
Minimal spend by visitors from outside the area compared to disruption suffered
900 out of 1000 jobs won't go to locals – this will increase commuter traffic
Many jobs will be zero-hours / unsociable hours – of limited value – bad jobs and outweighed by the congestion, pollution, ugly architecture
Technology – video conferencing, etc. – is reducing need for business travel – but increased opportunities for air travel will inhibit these developments
Profits exported to Canada with little tax paid – no local benefit – owners don't live locally so don't feel the negative impacts
Better balance between inbound and outbound visitors needed if economic sustainability case to be accepted
Economy – positive comments
Brings more jobs to the region, directly and through supply chains – need to replace job losses in other sectors
Offers diverse range of careers

More airport jobs will reduce congestion into Bristol – people will have work closer to home
More choice of destinations/flights for the traveller / improved domestic and global connectivity
Economy becomes less London-centric – enhances the status of Bristol
Growth will help offset uncertainty associated with Brexit
Spending at BA helps prosperity – money circulates around local businesses and communities – avoids funding other areas of the country
Increased prosperity can pay to offset all the negative impacts of expansion
Opportunities for inbound tourism – stays rather than short outings to Bath, etc.
Well-located to serve SW and South Wales
Refusal would constrain BA's offer, losing airlines and associated growth to other regional airports – Cardiff could get all the economic benefit now bridge tolls removed
Environmental objections are nimbyist – flights will still happen but from other, less convenient locations
BA must expand to remain economically viable – region can't be left behind
Connectivity must continue to improve if region is to be competitive and future-proof
WsM is dying through development being blocked

Further comments

- Some objectors say that the application should be refused as a matter of principle because any increase in flights will result in increased greenhouse gas and carbon emissions, which is in direct conflict with Governments commitment to reduce such emissions. Objectors also say that tackling greenhouse gas and carbon emissions from the net increase in flights that will arise from this application is a significant material consideration for the local planning authority and it outweighs the sum of other considerations.
- Flying not only emits CO₂, but by emitting other gases and particles at altitude and forming contrails, there is an additional contribution to global warming that may be even more significant than the CO₂ emitted. Because these 'non- CO₂ effects' are variable and hard to calculate exactly, they are almost always ignored in planning and policy decisions, so the climate impact of aviation is significantly underestimated.
- The Government claim that emissions will be dealt with by the industry's carbon offsetting scheme, CORSIA, does not hold up to scrutiny. Offsetting cannot be a long-term solution to aviation emissions, and we should be pursuing genuine reductions by managing aviation demand.
- The ES states that there is uncertainty regarding UK GHG policy in the aviation sector. It would be logical for local government to work based on facts, rather than government indecision. The latest science means we need to reduce emissions even more radically than legislated for in the Climate Change Act. Excluding aviation from this would make meaningful carbon reduction in line with the Paris agreement impossible and is unfair to other sectors of the economy.
- The Environmental Statement describes the carbon emissions from the project as 'not significant'. This is misleading. Operational carbon emissions by 2026 would be significantly greater than from all other transport, homes and industry in North

Somerset in 2016. The Environmental Statement predicts a 73% increase in aviation emissions and a 66% increase in the overall operational emissions of the airport compared to 2017.

- Emissions from land use changes from 10 mppa to 12 mppa should be recorded as a baseline for future land take and the record submitted to the national inventory to be offset. Under EU legislation (May 2018), Member States must ensure that greenhouse gas emissions from land use, land use change or forestry are offset by at least an equivalent removal of CO₂ from the atmosphere in the period 2021 to 2030.
- Increased pollution will affect climate change and more than negate reductions elsewhere. BA aims to be carbon neutral by 2030, yet the relevant Action Plan to achieve neutrality will post-date any permission, denying meaningful public scrutiny. BA's own figures for projected carbon emissions conflict with JSP carbon reduction targets of 50% by 2030. Climate change impacts cannot be mitigated sufficiently from the proposals put forward.
- Proposals contrary to: (i) NPPF objectives for sustainable development; (ii) Article 3 of the UN Framework on the Convention of Climate Change; (iii) Local Policy CS23.
- The assessment of climatic and carbon emissions should be subject to independent expert advice.

APPENDIX 3

Proposed Planning Obligations

Planning obligations secured through a Section 106 Legal Agreement for the 10 mppa permission (ref no. 09/P/1020/OT2) required BAL to fund public transport services improvements; implement a staff travel plan; make financial contributions towards sub-regional transport schemes and local highway improvements; carry out air and ground noise reductions schemes; carry out continuous air quality monitoring; commit to an skills and employment plan; and make annual payments in to an environmental improvement fund. Some obligations were one-off requirements. Others are ongoing. The 10 mppa Section 106 Agreement has been reviewed as part of this application. A new Section 106 Legal Agreement is required to mitigate the impacts of the proposed development, if planning permission is granted.

Regulation 122 of the 'CIL' Regulations 2010 (as amended by the 2011 and 2019 Regulations) and para 56 of the NPPF 2019, says that a planning obligation may only constitute a reason for granting planning permission for the development if the obligation is:

- The range of obligations that is required is summarised below. All obligations will be required to be funded by BAL including any administrative costs.

Surface Access, Highway Works / Parking and Enforcement

A new Airport Surface Access Strategy (ASAS) will be required within 6 months of planning consent. The ASAS will contain a 'Transport Mode Hierarchy', recognising the environmental impact of the different modes of transport, and with an objective to move as many people as possible higher up the hierarchy. The ASAS would include improvement measures, as well as short term goals and an Annual Action Plan. The requirements are below.

Passenger Travel

The key part of the ASAS will be to increase passenger travel from 15% using public transport at 10 million passengers per annum (mppa) up to a target of 17.5% by 12 mppa. This will include use of a Key Performance Indicator of achieving an average increase of 0.5% improvement in public transport use per annum to inform the Steering Group of the progress towards the overall target of 17.5%.

To ensure progress toward the public transport target of 17.5% at 12mppa is being delivered, annual reviews will consider progress against the KPIs for public transport mode share. Additional measures are to be implemented for each individual year that the KPI of 0.5% improvement in public transport mode share is not met. The KPI would inform the Steering Group who would implement the following measures where appropriate:

1. The first individual year of not achieving the KPI of 0.5% (as determined by a methodology to be agreed with NSC)) – A comprehensive review of the ASAS and Travel Plan, to include funding of the revised measures by BAL. The scope of the review to be agreed with North Somerset Council.

2. The second consecutive year of not achieving the KPI of 0.5% (as determined by a methodology to be agreed with NSC) – Additional funding of public transport measures or services beyond those set out in the S106. The extent to be agreed with North Somerset Council.
3. The third consecutive year of not achieving the KPI of 0.5% (as determined by a methodology to be agreed with NSC) – Development of an action plan to include the principle of a reasonable reduction in consented parking spaces or other modifications, at a rate to be agreed with North Somerset Council.

Specific measures to achieve this are as follows:

- i) Governance through a Steering Group. A continuation of the dedicated steering group established under the 10 mppa Section 106 (S106) Agreement with representatives from Bristol Airport Limited (BAL) and North Somerset Council (NSC) to oversee and ensure delivery of the agreed S106 measures. The steering group would manage funding, where appropriate, and report to the Airport Transport Forum on progress.
- ii) Continuation of the 10mppa Public Transport Fund. A fixed sum payment of £125,000 in 2020 and a further fixed sum payment of £125,000 in 2021. This fund would provide a transition from the current S106 Agreement into a new 'Public Transport Improvement Fund' proposed as part of the 12 mppa S106 Agreement. Transitional arrangements would be agreed by the steering group regarding the existing local bus service that is supported by the 10 mppa fund.
- iii) Continuation and underwriting of the 10 mppa strategic public transport services. A commitment to ensure the continuation of the strategic bus and coach service connections that have been brought forward as part of the 10 mppa S106 Agreement, including minimum frequencies as at consent of 12 mppa application. This would include the strategic bus service connections to Bath, Bristol and Weston-super-Mare as well as the strategic coach service connections to South Wales and the wider South West.
- iv) A new Public Transport Improvement Fund totalling £625,000 which would be used by the steering group to bring forward improvements to public transport services and infrastructure at the airport aimed at contributing towards modal shift to public transport services. The total fund would be held in escrow and drawn down by the steering group as required. Funding for services would be on a kick-start basis, with continuing funding for service improvement subject to viability. Early priorities for the Public Transport Improvement Fund could include:
 - Improvements to the Bristol Temple Meads interchange;
 - Worle Station Improvements (study);
 - Bus to rail information/ticketing integration;
 - Bath Spa interchange improvements.
- v) Public Transport Publicity and Promotions. A commitment to develop an annual marketing programme in conjunction with the ASAS to raise awareness of, and promote, all sustainable modes of transport at the airport. To include development of the BAL website to enable customers to make a comparison between all journey options by different modes (including parking and public transport) and pricing during or to inform their booking.

- vi) Metrobus Service Integration and Network Improvements. A feasibility study would review integration of the A1 Bristol Flyer service with the Metrobus network, with BAL retaining full ownership and management of the service. The feasibility study would include (but not be limited to):
- Joint Metrobus/Airport branding of vehicles;
 - Consideration of a two-zone fare structure with a central zone aligned with Metrobus fares and an Airport fare zone;
 - Acceptance of Metrobus tickets for interim journeys within the central zone;
 - Upgraded information across the Metrobus network to add Bristol Airport to the Metrobus network map;
 - Off-bus ticketing options;
 - Review of stopping patterns.

Funding will be provided for service enhancements and integration and infrastructure improvements on the Metrobus network to deliver the service integration proposals.

An initial budget of £500,000 would be made available to cover service enhancements, integration and infrastructure projects. The budget would be allocated to the route to include BA but excluding the PTI. Where the review identifies further enhancements that require funds beyond the £500,000, then further funding sources may need to be identified. Funds are to be managed by the steering group.

A feasibility study would be undertaken within six months of planning approval and measures would be implemented within 18 months, subject to agreement with the appropriate Metrobus authorities and the securing of any necessary planning approvals.

vii) Weston Flyer Improvements

Commitment to an enhanced 24/7 timetable operation, to be operational within six months of planning consent and funded by BAL. The service would be reviewed after 12 months. The continuation of the 24/7 timetable beyond the 12-month period would be subject to viability.

An enhanced 30-minute frequency. An ongoing commitment to enhance the timetable of the Weston Flyer service to half hourly at 10mppa, subject to viability.

Integration with Worle Station. Weston Flyer service would be integrated into Worle Station, including waiting and stop enhancements, supporting the future Worle Station enhancement works. This would be supported and funded by BAL and would be implemented within six months of planning consent.

Annual marketing and improvement plan. An enhanced marketing and promotions plan for the Weston Flyer service, including active promotion of the current integrated rail/bus ticketing.

viii) New Public Transport Services

A new Flyer Shuttle service for Clevedon. A new Flyer Shuttle service, which would be scheduled public transport, covering 24/7 demand, and using low-emission vehicles (e.g. EURO6). Likely to be delivered as a demand-responsive, 'book-in-advance' type service. Connecting Clevedon to Bristol Airport via Yatton and Cleeve and calling at Yatton rail station.

A new Flyer Shuttle service for Nailsea. A new Flyer Shuttle service, which would be scheduled public transport, covering 24/7, and using low emission vehicles (e.g. EURO6). Likely to be delivered as a demand-responsive, 'book-in-advance' type service. Connecting Nailsea to Bristol Airport via Backwell and calling at Nailsea & Backwell rail station.

Both new services would be implemented within five months of planning approval. The services would be reviewed by the steering group at 6-monthly intervals. These reviews would include (but not be limited to);

- consideration of the ongoing service viability,
- vehicle capacity,
- the availability of the service to passengers and staff,
- the timetable,
- use of ULEV vehicles subject to viability, and
- the route.

Any future funding that may be required after an initial 24-month period would be through the Public Transport Improvement Fund.

ix) Coach Services - Service and Infrastructure Improvements

Delivery of service improvements, through enhanced timetables and/or greater network coverage, to the current express coach service routes to South Wales and to Somerset/Devon.

Delivery of infrastructure improvements to the routes. BAL to produce a feasibility study in liaison with the service operators and local authorities to determine the measures and design. Study to be completed within 6 months of consent.

A budget of £200,000 will be made available to cover both potential service and infrastructure improvements, to be managed and allocated by the steering group. This budget would be evenly distributed across the South Wales and the Somerset/Devon routes.

- x) Multi-modal pricing review. To be completed within 6 months following consent with the scope and methodology to be agreed with NSC. Aim is to ensure options higher up the modal hierarchy are supported and enabled financially through cost comparison analysis.

Public Transport Interchange (PTI)

A PTI will be delivered to provide a high-quality facility. Construction of the PTI would commence no later than 12 months following planning consent (subject to securing necessary planning approvals) with it being complete and operative within 30 months post

consent. Details will be submitted to NSC for approval prior to commencement of construction of the PTI.

The location is currently envisaged to be immediately adjacent to the terminal on the site of the current 'Drop and Go' express drop off car park, allowing for direct integration with the terminal. The PTI would be provided to at least the same standard as under the 10mppa proposals. The new facility will provide a significant enhancement to the airport's bus and coach capacity, an enhanced experience for public transport users, and with the new location being directly adjacent to the terminal, it would allow BAL to create a sense of 'arrival' at the terminal for all passengers travelling to the airport by bus and coach. The walking distance for passengers between the PTI and the terminal facilities would be comparable with the previous design.

Staff Travel

A new Travel Plan for all employees working at the airport to be finalised within 6 months of planning consent. A new staff travel target of 30% by sustainable modes is proposed. This would include the introduction of an Employee Travelcard Scheme to promote and encourage staff at Bristol Airport to use sustainable transport modes, reflecting the transport mode hierarchy. The scheme would be applicable to all staff working at Bristol Airport. Annual 'Travelwest' (or alternative) staff travel surveys, covering all businesses at the airport, would provide the monitoring of this target.

Ultra-Low Emission Strategy

A commitment to develop an Ultra-Low Emission Strategy to consider how ultra-low emission vehicles can be introduced and accommodated as part of the ASAS. The strategy would be introduced within six months of planning approval and would include the following:

- An implementation plan for accelerating the introduction of lower emission vehicles into the Bristol Airport fleet.
- A minimum of 10 additional EV charging bays for passengers, to be delivered within 12 months of submission of the strategy.
- Additional roll-out of EV charging and supporting infrastructure to be set out on an annual basis to relate in quantum and type to the national and sub regional fleet share (whichever is greater) in all new and existing parking locations and types, plus additional passive provision.
- A strategy to identify a phased introduction of EVs into the contracted taxi fleet, with an initial target of 75% of vehicles to be fully electric or hybrid electric vehicles in the next contract, transitioning to 100% by 12mppa subject to market testing. Should a future scenario arise whereby BAL manage the taxi operation at the terminal without a contract, an alternative arrangement would be prepared and agreed with North Somerset Council to deliver an ambitious target.

Parking

Agreement to a phased implementation of the proposed car parking to be brought forward under the 12 mppa planning consent, as follows:

- Phase 1 – Removal of the seasonal restrictions on the existing Silver Zone Car Park extension plus development of the proposed further Silver Zone Car Park extension. Phase 1 would occur in parallel with the early-delivery of public transport improvements and a multi modal charging review being completed and implemented.
- Phase 2 – Construction of a second multi storey car park (MSCP2 is already consented).
- Phase 3 – Construction of a third multi storey car park. Phase 3 would be conditional on achieving an interim target of 16% of airport passengers travelling by public transport.

Prior to the commencement of Phase 3, including the sign off of designs by the LPA, a parking quantum review will determine the optimum capacity of MSCP3. The review will examine all new factors and information (further to the application information, Transport Assessment, Parking Demand Study and Parking Strategy documents). The study would identify the appropriate quantum of spaces for MSCP3 up to 3,900 spaces in total for this planning consent. The study conclusions will require approval from NSC in order to release the final quantum of parking spaces (of the 3900 which are consented) only against satisfactory consideration against these conditions.

The Study will:

- Be undertaken to a methodology and scope agreed with NSC;
- Consider all new factors, including but not limited to:
 - impacts of enforcement action on unauthorised parking sites;
 - on street impacts in local villages;
 - new parking operations serving the airport;
 - public transport modal share.
 - Drop off and pick up demand

Review of Drop Off Zone (DOZ) charges

To reflect the new Transport Mode Hierarchy within the emerging ASAS, which identifies drop-off trips as having the highest impact on the transport network, a commitment to review DOZ charges in order to actively discourage drop-off and move as many people as possible higher up the hierarchy.

Local Parking Controls

An ongoing commitment to deliver the Parking Summit Action Plan. BAL would provide funding, resources and coordinate discussions with local parish councils and stakeholders, with NSC (as the Highway Authority) to lead on the implementation and delivery of Traffic Regulation Order (TRO) measures. This will have the effect of targeted parking restrictions in roads and laybys where impacts are harmful. The geographical area and precise locations will need to be agreed with NSC. BAL shall also contribute £225,000 to fund a new, dedicated NSC airport parking and enforcement officer over 5 years.

Innovation

A commitment to support the West of England Combined Authority (WECA) proposals for a Mobility as a Service (MaaS) platform, proposed as part of WECA's Future Mobility Zone bid to the Department for Transport (DfT). A direct contribution of £25,000 towards the project, with an ongoing commitment to work collaboratively with WECA and other stakeholders to bring forward a MaaS platform that can be implemented across the region, including at Bristol Airport.

Monitoring

A programme of traffic surveys would be undertaken to monitor traffic levels at the airport and at key locations in the surrounding network. These surveys would be undertaken at least every two years beyond 10 mppa to 12 mppa, with annual surveys undertaken should annual growth at the airport exceed 0.5 mppa. A full Monitoring Plan to be agreed with NSC immediately following planning consent. The following locations would be included:

- Bristol Airport site access junctions;
- A38 Barrow Street signal junction;
- A38 Churchill signal junction (if required following capacity analysis work in 2019);
- B3130 Chew Valley route (locations to be agreed);
- M5 Junction 22.

Traffic survey results would be used to inform the steering group for the potential implementation of measures using a Highway Improvement Fund, should the impact be deemed material.

Passenger Travel

An annual programme of monitoring for all modes and reporting to the steering group annually with all monitoring to commence prior to commencement post consent. The programme will include:

- Annual Civil Aviation Authority (CAA) passenger surveys with a list of supplemental questions to be agreed with NSC and undertaken annually;
- Annual staff travel surveys (for all staff working at BAL site) via Travel West annual survey or an agreed replacement;
- Parking monitoring data for BAL car parks and annual identification of external parking sites
- Automatic traffic counts;
- Mode share monitoring (by ticket sales and similar supporting data).

Highway Improvement Fund

A Highway Improvement Fund would be implemented post-10 mppa. This would provide a fund for local highway improvements which may be identified in future as part of the Traffic Monitoring Plan.

A38 / Downside Road / West Lane Improvement Scheme

It is likely that NSC will implement the highway improvement scheme at the A38 junctions with Downside Road and West Lane, based on the approved scheme. BAL would meet all costs involved and NSC would deliver the scheme as soon as practical, but with a back-stop agreement that BAL would deliver the scheme via a Section 278 Agreement should there be delays to NSC delivery. Formal agreements to be developed.

Feasibility Study for the A370/SBL

A fixed sum contribution to NSC of £50,000 towards a feasibility study for future strategic improvements at the A370 junction with the South Bristol Link.

Noise (Air and Ground Noise)

Air Noise

A draft Revised Noise Control Scheme will be prepared by BAL in consultation with NSC and the Flight Operations Committee no later than 6 months after the commencement of development. The Revised Noise Control Scheme will include measures to facilitate ongoing improvements in the levels of aircraft noise and minimise the impact of noise and will form a component of the Bristol Airport Noise Action Plan. In addition to the measures contained in the existing Noise Control Scheme, it will include:

- Further measures to encourage operators of aircraft to adopt operational procedures and practices in conjunction with the Flight Operations Committee aimed at achieving ongoing improvements in the levels of aircraft noise and minimising the impact of noise and to facilitate the adoption of these procedures and practices including:
 - The use of continuous descent approaches wherever possible, consistent with flight safety;
 - The avoidance of reverse thrust between 23:00 hours and 06:59 hours, consistent with flight safety;
 - The application of best practice flight management procedures which might reasonably be expected to reduce noise and fuel burn.
- A mechanism for imposing penalties on airlines for the breach of noise limits including publication of an airline performance league table and incentives for the use of quieter aircraft.

The Revised Noise Control Scheme will be implemented within 12 months of the commencement of development, with details of progress and monitoring data captured within the Annual Operations Monitoring Report.

As soon as reasonably practicable following the publication of the third Annual Operations Monitoring Report (following the grant of planning permission), a verification report will be submitted to NSC that will identify the input data, the methodology and the output data used to calculate noise contours and recommend the appropriate calculation procedure for producing the noise contours. The report will be submitted to NSC for approval prior to publication. The report shall then be published subsequently at three yearly intervals as soon as reasonably practicable following the publication of the relevant Annual Operations Monitoring Report.

Enhanced Noise Insulation Scheme

Residential properties located within the 57dB, 60 dB and 63 dB (A) $L_{Aeq, 16hr}$ (07:00 – 23:00) contours and the 55 dB (A) $L_{Aeq, 8hr}$ (23:00 to 07:00) contour will be eligible for noise insulation grants at set out in the schedule below.

Contour	Sum
63 dB (A) $L_{Aeq, 16hr}$ (0700h – 2300h)	£7,500
60 dB (A) $L_{Aeq, 16hr}$ (0700h – 2300h)	£3,750
57 dB (A) $L_{Aeq, 16hr}$ (0700h – 2300h)	£3,750
55 dB (A) $L_{Aeq, 8hr}$ (23:00 to 07:00)	£5,500

Grants will apply from the commencement of development.

Details of the noise insulation grants will be submitted to and approved by NSC prior to the commencement of development.

Ground Noise

An updated Ground Noise Management Strategy will be produced in consultation with NSC, NATS and airlines within 6 months of the commencement of the development. The Ground Noise Management Strategy will identify measures to minimise the levels and impacts of ground noise at the airport and will form a component of the Bristol Airport Noise Action Plan. Measures will include:

- i) Operational and procedural controls on the ground running of aircraft. This shall include:
 - Measures to reduce noise from pre-flight servicing / checks of the aircraft while stationary at aircraft stands;
 - Measures to reduce and phase out the use of mobile diesel generators, through fixed electrical ground power (FEGP) and any transitional arrangements towards FEGP at all aircraft stands;
 - Measures to reduce aircraft engine noise while aircraft are taxiing.
- ii) Identification of key performance indicators for monitoring ground noise management.
- iii) The installation of a permanent ground noise monitor which will be situated on the airport site at a location to be agreed with NSC.

Implementation of the Ground Noise Management Strategy will commence within 6 months of the Strategy being agreed by reviewing, producing, maintaining and enforcing standing instructions in relation to activities covered by the Strategy and using reasonable endeavours to procure the implementation by aircraft operators of the Ground Noise Management Strategy, including pursuing follow up action with the operators of aircraft that disregard the standing instructions subject to constraints of safety. Progress of the Ground Noise Management Strategy will be reported through the Annual Operations Monitoring Report.

Air Quality

An Air Quality Action Plan will be produced no later than 6 months after the commencement of development. The Air Quality Action Plan will detail the initiatives to monitor and improve air quality at the airport. Monitoring will include:

- I. Continuous monitoring of oxides of nitrogen and fine particulate matter (PM10 & 2.5) at two appropriate fixed sites (one existing and one new location) to be agreed with NSC.
- II. Diffusion tube monitoring of nitrogen dioxide at not less than 16no. sites to be agreed with NSC. In addition, co-location monitoring with at least three diffusion tubes will be established at the site of the fixed continuous monitor.

- III. An annual report (in the format of a section in the Annual Operations Monitoring Report) with a summary of the results described in (i) and (ii) above. The Annual Operations Monitoring Report will be presented to the Airport Consultative Committee and made public.
- IV. Air quality monitoring results will be reviewed with NSC on an annual basis. If monitoring identifies a significant deterioration in the air quality at the airport based on recognised and established standards, a mitigation plan will be provided to NSC within 3 months detailing steps as to how this will be improved.
- V.

Environment and Community

Airport Environmental and Amenity Improvement Fund

An Airport Environmental and Amenity Improvement Fund will be established within 12 months of the grant of planning permission. The Fund will be administered by representatives of BAL and NSC on behalf of the local community and will be used for the purposes of funding mitigation to address unforeseen adverse environmental impacts or adverse impacts on the amenity of the local community arising from the development. BAL will contribute £100,000 to the Airport Environmental and Amenity Improvement Fund on an annual basis for 10 years with the Fund to be held jointly and administered by BAL and NSC. The geographical area to which the Fund applies will need to be agreed.

Employment

A Skills and Employment Plan will be submitted to NSC for agreement within 6 months of the commencement of development. The Skills and Employment Plan will be aimed at achieving the delivery of employment opportunities for residents of North Somerset and adjoining areas. It shall comprise the following:

- i) A 'Construction Phase Local Labour Agreement and Action Plan'. This shall consist of a local labour agreement and action plan, bound by the principles of the 'Construction Training Industry Board (CITB) Client Based Approach', relating to the construction phase of the development.
- ii) An 'Achieve Programme' to deliver employment and skills interventions and a programme of activities with education providers relating to the operational phase of the development. This will include a financial contribution of up to a maximum of £300,000 to commission a specialist employment support provider to deliver a suite of employment and skills interventions which would support residents to access end use/ operational phase jobs. The timing of the payment and associated work will need to be agreed. The fund will be held jointly and administered by BAL and NSC.
- iii) An 'Operational Phase Education Programme'. This will require BAL to engage with the education sector from primary level through to university and develop opportunities for young people and adults to access employment at Bristol Airport. Details of its timing and a review will need to be agreed.
- iv) A 'Monitoring Programme'. This will set out the agreed key performance indicators against which the implementation of the Skills and Employment Plan will be monitored.

Appendix 4 - List of documents

Drawings

- 17090-00-100-400 Location (Red Line) Plan
- 17090-00-100-401 Composite Site Plan
- 17090-00-100-402 Site Reference Plan
- 17090-00-100-403 Existing Site Plan
- 17090-00-100-404 Existing Site Plan – North
- 17090-00-100-405 Existing Site Plan - Central
- 17090-00-100-406 Existing Site Plan - South
- 17090-00-100-407 Proposed Site Plan
- 17090-00-100-408 Proposed Site Plan - North
- 17090-00-100-409 Proposed Site Plan - Central
- 17090-00-100-410 Proposed Site Plan - South
- 17090-00-100-411_01 Permitted Development Rights Reference Site Plan
- 17090-00-200-400_00 Ground Floor Plan - Existing
- 17090-00-200-401_0 Ground Floor Plan – Proposed
- 17090-10-200-400_00 First Floor Plan – Existing
- 17090-10-200-401_00 First Floor Plan - Proposed
- 17090--10-200-400_00 Basement Floor Plan - Existing
- 17090--10-200-401_00 Basement Floor Plan - Proposed
- 17090-20-200-400_00 Mezzanine Floor Plan – Existing
- 17090-20-200-401_00 Mezzanine Floor Plan - Proposed
- 17090-ZZ-125-400_00 Roof Plan – Existing
- 17090-ZZ-125-401_00 Roof Plan – Proposed
- 17090-ZZ-300-400_00 South Terminal Extension & B1, B2 and B3 – Existing Elevations (Sheet 1 of 2)
- 17090-ZZ-300-401_00 South Terminal Extension & B1, B2 and B3 – Proposed Elevations (Sheet 1 of 2)
- 17090-ZZ-300-402_00 South Terminal Extension & B1, B2 and B3 – Existing Elevations (Sheet 2 of 2)
- 17090-ZZ-300-403_00 South Terminal Extension & B1, B2 and B3 – Proposed Elevations (Sheet 2 of 2)
- 17090-ZZ-300-404_00 West Terminal Extension – Existing Elevations
- 17090-ZZ-300-405_00 West Terminal Extension – Proposed Elevations
- 17090-ZZ-300-406_00 Terminal Canopies – Existing Elevations
- 17090-ZZ-300-407_00 Terminal Canopies – Proposed Elevations
- 40506-Bri075c Integrated/embedded Landscape, Visual and Ecology Mitigation Masterplan
- C1124-SK-A38-010 11.0 A38 Junction Improvements – Option 10
- C1124-SK-A38-011 1.0 A38 Junction Improvements – Vehicle Track Analysis 1 of 3
- C1124-SK-A38-012 1.0 A38 Junction Improvements – Vehicle Track Analysis 2 of 3
- C1124-SK-A38-013 1.0 A38 Junction Improvements – Vehicle Track Analysis 3 of 3

Documents

- Planning Statement (including Bristol Airport Forecast Validation) – December 2018
- Environmental Statement (including Flood Risk Assessment) – December 2018
- Design and Access Statement – December 2018
- Consultation Feedback Report – November 2018
- Economic Impact Assessment – November 2018
- Transport Assessment – December 2018
- Draft Workplace Travel Plan – December 2018
- Parking Demand Study – December 2018
- Parking Strategy – December 2018
- Foul and Surface Water Drainage Strategy – December 2018
- Lighting Impact Assessment – December 2018
- BREEAM Pre-Assessment – November 2018
- Response to Request for Further Information Pursuant to Regulation 25 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 - April 2019
- Response to Request for Further Information Pursuant to Regulation 25 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 - October 2019
- Response to North Somerset Council Highways and Transport Comments – December 2019